Remarks
ON A
CASE OF PNEUMOCOCCUS INVASION OF THE THROAT
UPON WHICH LARYNGEAL AND PULMONARY TUBERCULOSIS SUPERVENED.

BY
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IN November, 1908, I delivered at the Polyclinic a lecture on the question of pneumococcus invasion of the throat, which was later on published in the *Medical Magazine* for December, 1908. In this lecture I described two cases of a hitherto unrecorded affection of the throat due to pneumococcus invasion. The material being so small, it was of course impossible to establish a full and characteristic picture of this new form, and I contented myself, after describing in detail the course of the affection in the two cases I had observed, with saying that I had "seen two cases of a throat affection which were characterized by a course entirely different from any known to me in other diseases of that part, namely, by showing the most surprising fluctuations between intensely painful inflammatory conditions of the throat and improvements which appeared to render complete and speedy recovery almost a certainty, but which repeatedly gave way to absolutely unexpected aggravations, until finally—in the one case certainly spontaneously, in the other one during an iodide of potassium treatment—complete recovery took place."

I further stated that these cases were characterized by profound asthenia, by ulceration of the affected parts, by an almost entirely afebrile course, and by complete absence of swelling of the cervical lymphatic glands; that in the first case pneumococci were present almost in pure culture, whilst in the second case the culture consisted predominatingly of pneumococci, and that in both cases towards the end a punched-out loss of substance occurred, whilst by far the greater part of the ulcers healed without leaving any scarring behind.

So far as I know, no further instances of pneumococcus invasion of the throat have been recorded since. Having lately had the opportunity of observing a third case, which ended fatally, owing to tuberculosis supervening upon the original infection, I consider it my duty to place its details on record.

Mr. H. R., aged 45, a well-known and universally respected member of our profession, suffered from sore throat early in September of last year whilst in Scotland. He consulted Dr. P. McBride of Edinburgh on September 25th, who found nothing but an enlargement of the lingual tonsil.

I saw the patient, who was a great friend of mine, on October 27th. He then complained of unpleasant sensations in the throat, which were referred to the region of the lingual tonsil. He had not felt well in Scotland, he told me, and shortly before his return the symptoms had localized themselves in the region of the base of his tongue. The lingual tonsil was found to be distinctly swollen, and was treated with applications of a solution of iodine and iodide of potassium (Lugol's solution). After a few applications the swelling decreased, and the patient for a few days felt better.

On November 5th he returned, complaining of distinct pain in the left side of his throat. An irregular superficial small ulcer, surrounded by a small area of whitish discoloration, was seen in the lateral wall of the throat, just opposite the last molar, and in its neighbourhood a few small irregular spots of white infiltration, but without loss of substance, were visible. The ulcer was not bigger than a split pea. It was cauterized with a weak chromic acid solution, and, as this proved of no avail, with a solution of nitrate of silver (60 grains to the oz). For a time these applications afforded relief; usually, however, within a few days after disappearance of the ulcer, it reappeared, sometimes with, sometimes without, a whitish infiltration in its neighbourhood. No enlargement of cervical glands was ever present.

The course of the affection induced me to think of a pneumococcus infection, as in several respects it corresponded to my first case, and on telling the patient of my suspicion, he submitted a specimen of a scraping from the ulcer to the bacteriological institute of his own hospital, with the result that an almost pure pneumococcus culture was obtained. After this I informed him that the affection would probably last a considerable time, but that ultimately recovery might be hoped for with certainty, to conclude from the issue in my previous two cases. For nearly two months the patient, who was devoted to his work, continued, in spite of his affection, to attend his private duties. On meeting him one day over a bad septic case, I strongly warned him not to expose himself to infection whilst his throat was in an ulcerated condition, but could not prevail upon him to take care of himself in this respect.

During the first days of the month of December he told me that he had been occasionally a little feverish. On December 15th the pharyngeal ulcer had again almost disappeared, but there was distinct swelling of the mucous membrane over both arytenoid cartilages without subjective symptoms of any kind. On December 21st there was again no recurrence of pharyngeal ulceration, but the mucous membrane over both arytenoid cartilages was very much swollen, partly oedematous, and the epiglottis too had very suddenly become tumefied and oedematous, so that the aspect of the larynx was almost typical of laryngeal tuberculosis. The patient's voice had become husky, and there was slight difficulty in swallowing. His pulse was quiet and the temperature was normal, but I sent him to bed all the same, asked him to put a Leiter's tube round his neck, to suck ice, and to live on cold fluid food only.

When I went to see him on the 22nd at his house, I found him considerably relieved, the swelling of the arytenoids had considerably diminished, that of the epiglottis was unchanged. I was very doubtful whether I should consent to his going into the country, as he had wished, on account of the laryngeal oedema, and ultimately arranged that he should come and see me next morning before going away. When he called on the 23rd, another considerable change had taken place; the oedema of the epiglottis was materially reduced in size from what it had been on the previous day, although it had not quite disappeared, whilst the oedema over the arytenoid cartilages, and indeed over the whole posterior wall of the larynx, had again considerably increased. Although he said that he felt much better, I had great doubts about the wisdom of letting him go into the country in this condition, and sent him to Mr. Butlin for a second opinion. He returned and told me that Mr. Butlin had at first sight said he would certainly have considered the larynx tuberculous, but that he had never seen a tuberculous swelling of this kind originate so suddenly. All the same, he thought it would not be wise for the patient to go into the country whilst in this condition. Upon this joint expression of opinion the country visit was given up.

In the course of the next week matters remained very much *in statu quo*. The patient was kept indoors, and for the first two or three days wore a Leiter's tube with ice-water round his neck. As this proved ineffectual to reduce the laryngeal swelling, repeated applications of mustard plasters were made to the neck, with no better result. He occasionally suffered from very slight pain in the left side of his throat, where the pharyngeal ulceration had reappeared, and from slight difficulty in swallowing. The actual conditions varied from day to day. One day the epiglottis was more swollen, next day the swelling had diminished, and the arytenoids, which on the previous day had been less swollen, had meanwhile become more oedematous. On one occasion he had slight disturbance in breathing in the evening, but this passed so quickly away that he did not think it necessary to send for me. Meanwhile the patient, although he would not admit it, became visibly depressed. Neither internal administration of iron and quinine nor the use of a spray of adrenalin and cocaine had any effect upon the local conditions. I did not dare at that time to give iodide of potassium on account of the laryngeal oedema, which I was afraid might be increased by the use of that drug.

On December 30th the swelling of the epiglottis was very much diminished, that of the arytenoids quite unchanged; fresh ulceration had appeared in the pharynx, this time on both sides symmetrically; the ulcer on the left side had again above it quite a lot of serpiginous white opacities in the mucous membrane. Although the effect of the injections of a pneumococcus vaccine had not been a success in my first case, I suggested that Dr. Bulloch, who was a friend of the patient's, might be asked to prepare some such vaccine, and to this the patient, who had been all along desirous of trying this treatment, at once agreed. The same night when this was decided upon and previous to any vaccine treatment he had a slight rigor, followed by a rise of temperature to 101°. At the same time his throat felt very uncomfortable. This, however, passed off quickly, and the following morning he was none the worse for the attack. The epiglottis was less swollen that day, the pharyngeal ulcers were healing, and the oedema over the arytenoids was unchanged.

On January 2nd the patient, who had been seen on the previous day by Mr. Bowlby, who was a friend of his, was distinctly better. He could swallow more easily, had hardly any pain, and had had a good night, although the temperature on the previous evening had again risen to 100°. Dr. Bulloch informed me on that day that the swab which had been taken from the patient's throat contained various micro-organisms, with great predominance of pneumococci; that he had injected a rabbit and four mice with the culture, and that he was about to prepare a vaccine from it. On that day the oedema had quite disappeared from the epiglottis, the swelling over the arytenoids was much diminished, and the grey discoloration in the pharynx had given way to more natural colour, whilst the ulceration in that part had quite disappeared on both sides. The patient was allowed to take some warm food, was given a tonic, and permitted to take a little outdoor exercise, weather permitting.

It ought to be mentioned here that during the time the patient was in bed I almost daily carefully examined his chest without detecting the slightest evidence of disease.

His improvement continued during the next few days, and it was decided in consultation with Mr. Bowlby to grant the patient's urgent request, and let him go to Shanklin to recruit his strength, where he was to be under the care of Mr. Cowper. Now that the oedema had completely disappeared from the larynx, I gave the patient iodide of potassium as a matter of conscience, although there never had been any history nor any symptoms of specific disease. I may say at once that the drug had no effect whatever.

The reports from Shanklin were only moderately satisfactory. On January 18th Mr. Cowper reported that there had been a considerable amount of oedema of the uvula, and that after this had diminished the tumefaction of the epiglottis had returned, whilst small ulcers were now visible in the mucous membrane over the arytenoid cartilages.

On January 24th an inoculation was made of 7,000,000 pneumococci vaccine prepared by Dr. Bulloch. The patient's temperature went up to 101°, and he had several profuse perspirations, but the temperature next morning was normal, and Mr. Cowper reported that the whitish infiltration in the pharynx appeared diminished. A day or two afterwards, however, the throat began to feel more sore than previously.

On February 1st, 1909, I saw the patient again after nearly a month's absence. He came back looking very ill indeed, white and emaciated, with a pulse of 108, whilst his temperature was slightly subnormal. He told me that shortly after the injection of pneumococcus vaccine, nine days previously, his throat had been troubling him a good deal. On January 26th some ulceration had again appeared in his pharynx. This got worse during the next three days, and again three days afterwards the nurse found, in addition to the old ulcers on both sides of the pharynx, an ulcer ¼ in. deep on the posterior wall of the pharynx. There had also been considerable difficulty in swallowing and a good deal of pain. Three days before I saw him he had begun to improve a little, and at the time of the consultation he felt a little better on the whole. He himself attributed the aggravation to the vaccine injection.

On examination there were various fresh spots of ulceration on both lateral walls of the pharynx in the old situations, and another one further back on the left posterior pillar of the fauces. Further, there was a rather large but superficial ulcer on the posterior wall of the pharynx in the middle line below the uvula. The epiglottis was, if anything, a little less swollen than it had been when I last had seen him, but the arytenoid cartilages were not only fully as much tumefied as they had been during the worst stage before he left town, but were additionally all over superficially ulcerated, whilst the ventricular bands were either covered with some ashy-grey deposit or were infiltrated. Spraying with a glycothymoline solution did not alter the aspect. The vocal cords were free, and the voice was almost normal. The aspect of the larynx, however, was so typically tuberculous now that I proposed, and obtained, an immediate consultation with Dr. F. de Havilland Hall (also an old friend of the patient). Dr. Hall entirely agreed as to the tuberculous appearance of the larynx, and on joint examination of the chest we found some slight dullness posteriorly on the right side, corresponding to the spine of the scapula. In the same locality expiration was somewhat harsh, without any adventitious sounds being heard. We were much afraid that tuberculous infection had supervened, although, in view of the comparative novelty of the subject, we could not definitely exclude the possibility that a pure pneumococcus invasion might closely simulate a tuberculous affection. We agreed that, first of all, his expectoration should be repeatedly examined for tubercle bacilli and pneumococci, and considered, in the event of our suspicions of tuberculosis being corroborated, that a stay at a sanatorium would give the patient the best chance.

The bacteriological examination was made at the Laboratories of Pathology and Public Health, with the following result:

Tubercle bacilli are present in the sputum in small numbers; one small clump was seen. In a film stained by Gram's method there is a variety of micro-organisms present, many of them probably being derived from the mouth. Pneumococci are present in moderate numbers, and some short chains of cocci were seen.

This result was confirmed by a subsequent examination. On February 4th I made the following note:

The ulcer on the left side of the pharynx is distinctly more developed, and the two spots of ulceration have become confluent. On the right side the ulcer has again disappeared. On the posterior wall of the pharynx only the last remnants of the ulcer are visible. The left arytenoid cartilage appears to be much less ulcerated than it was, whilst the right is unchanged. The ventricular bands are less infiltrated, the vocal cords still free. Altogether a most perplexing case, the more so as his swallowing is much better, and as he has gained flesh. He does not now experience any pain on swallowing, which is, of course, quite against one's usual experience with tuberculous ulceration of the pharynx. On the other hand, his temperature goes up quite regularly to something like between 99° and 100° in the evening. Dr. Bulloch has examined his sputum yesterday, and whilst finding large numbers of pneumococci, could not satisfy himself as to the presence of tubercle bacilli. He is going to repeat his examination.

On February 6th, 1909,

The patient came, accompanied by Dr. Bulloch, who told me that all the mice which he inoculated with what he had obtained from the patient's secretion had died from general pneumococcus infection of the blood. The fact that they did not die so quickly as usual under such circumstances is due, in his opinion, first to the fact that in order to isolate the pneumococci, he had to make a culture on agar, which probably diminished its virulence, and secondly, that instead of injecting the culture into the peritoneum, he injected it merely subcutaneously; but there can be no doubt that the patient's affection, in part, at any rate, is of a virulent pneumococcus infection, as I had suspected from the first.

On the other hand, in a very large number of examinations made on two subsequent days only four tubercle bacilli altogether could be discovered by him (Dr. B.), his assistant, and a third bacteriologist, so that whilst their presence cannot be denied, it certainly looks very much as if a tuberculous infection had become engrafted upon the primary pneumococcus infection. We discussed what should be done under the circumstances. Every form of treatment—sanatorium, tuberculin injections, local treatment—seemed rather hazardous and experimental in view of the double infection, and I proposed that a consultation should be held between Drs. Kingston Fowler, de Havilland

Hall, Bulloch, and myself before a definite decision was arrived at. To this Dr. Bulloch and the patient agreed. It was further arranged that previous to this consultation fresh specimens of the pharyngeal and laryngeal ulcerations respectively should be examined by Dr. Bulloch. On this day the pharyngeal ulceration on the left side looked quite unchanged. On the right side there are again some fresh epithelial opacities of irregular form, the ulcer on the right side has almost healed, in the larynx the ulceration of the arytenoid cartilage is distinctly less, whilst the swelling remains the same. The patient has distinctly less pain in swallowing, the temperature is normal in the morning, and goes up to about 100° at night; no cough, no expectoration.

On February 9th a consultation took place between Drs. Kingston Fowler, Hall, Bulloch, and myself, in which, later on, also Mr. Bowlby joined. At the beginning of the consultation we informed Dr. Fowler of the history of the case, and Dr. Bulloch reported the extremely remarkable result he had obtained from the scrapings of the patient's pharyngeal and laryngeal ulcers which I had effected two days previously. Whilst the *pharyngeal* specimens were simply teeming with *pneumococci* without any evidence of tuberculosis, the scrapings taken from the ulcerated spots on the *arytenoid* cartilage contained large clumps of *tubercle* bacilli, sometimes 20 to 30 in one clump, such as are usually found only in vomicae, together with very numerous pneumococci. It seemed, therefore, quite evident that tuberculous infection had supervened upon the original pneumococcus infection. The patient's temperatures according to the latest charts show the characteristics of tuberculosis, being about normal in the morning and between about 99° and 100° in the evening. On joint examination of the pharyngeal and laryngeal conditions they were found to be very much as described in the last note. Even now it was curious how little the patient complained of pain and difficulty in swallowing.

The condition of the right lung had rapidly deteriorated since Dr. Hall's and my own joint examination; occasional crepitations were now heard in the supraspinous region on the right side, whilst the dullness extended to the apex of the middle lobe, and here also harsh prolonged expiration and occasional rhonchi were heard.

On discussing the case, we were unanimous in considering the prognosis as very bad, and we were also all of opinion that neither tuberculin injections nor local treatment of the larynx should be undertaken, but that the patient should go as soon as possible with his wife—who was throughout the bravest of comrades and the most devoted of nurses—to a sanatorium, where he should lead the ordinary sanatorium life, *plus* complete vocal rest. The patient agreed, and went a few days afterwards to the Cotswold Sanatorium, where during the remainder of his life Dr. Etlinger attended him with the greatest care and friendliest interest.

Unfortunately, the course of the disease throughout his stay, which lasted until his death on April 28th, was on the downward grade. At first, according to Dr. Etlinger's reports, there was a temporary slight improvement, the difficulty in swallowing being much relieved by applications of anaesthesin in the form of a spray, dissolved in palm oil. Local applications of nitrate of silver solution to the pharynx did not improve the condition.

On March 10th Dr. Etlinger reported that there had been a good deal of extension of the pharyngeal ulceration, which he then began to treat with applications of lactic acid.

On March 18th I went to the sanatorium to see the patient, who ever since his arrival, about a month previously, had been in bed with a temperature which lately had been varying between 100° in the morning and 102° at night. At the same time, his general health had kept up remarkably well, and, although he now had considerable difficulty in swallowing, he had actually gained 1½ lb. during the last week. His complaints referred particularly to pain in swallowing and to the difficulty of removing the abundant, extremely tenacious secretion from his throat.

On examining the pharynx I found it looking distinctly worse than when I had last seen him. The superficial ulceration and infiltration had so much spread to the right side that there was no longer any difference between the two sides. The uvula and posterior part of the gingivae had also become affected. The ulceration had not increased in depth, and the appearances now are those of a superficial white ulceration and infiltration with serpiginous edges, occupying the greater part of the soft palate, part of the uvula, the hindermost part of the gums, and—what is quite a new feature—the region of the lingual tonsil, where originally the whole affection had started. The larynx, which is not so much swollen as when I last saw it, shows the same appearance as that just described in the pharynx. The whole affection certainly does not look like an ordinary tuberculous affection. The conditions in the chest are very much the same as they were on the occasion of the last examination. There are no moist râles to be heard anywhere, nor has the dullness extended.

In the presence of Dr. Rupert Collins of Cheltenham, the bacteriologist to the Eye, Ear, and Throat Hospital there, I scraped the larynx, lingual tonsil, and pharynx, the scrapings being immediately transferred to culture tubes.

Dr. Collins's report was as follows:

From cultures made on Loeffler's blood serum, staphylococci and a small growth of pneumococci were obtained from the back of the tongue, whilst cultures made on agar-agar only showed staphylococci. The scrapings from the pharynx and base of uvula showed staphylococci and abundant growth of streptococci, whilst the cultures on agar-agar revealed similar conditions. The laryngeal scrapings on Loeffler showed a larger growth of pneumococci than that discovered in the scrapings from the back of the tongue, together with staphylococci and a small growth of streptococci, whilst on agar-agar staphylococci only grew. No examination was made for tubercle bacilli.

A subsequent report from Dr. Collins, dated March 24th, runs as follows:

Posterior Part of Tongue.—Scattered single and one large clump of tubercle bacilli, some pneumococci, and a few staphylococci and streptococci.
Pharynx.—A few tubercle bacilli and a few pneumococci.
Epiglottis.—Numerous tubercle bacilli, singly and in small clumps, numerous pneumococci, some staphylococci.
Sputum.—Numerous tubercle bacilli, a few cocci, and short bacilli.

It was evident from this that, as one would naturally expect, the two affections, which at first concerned different parts of the throat, as shown with such remarkable clearness by the result of Dr. Bulloch's examination on February 8th, should have become blended later on, seeing the close vicinity and constant opportunities of mutual infection.

From this time onwards a rapid deterioration in the patient's general health took place. The emaciation made constant progress and the temperature increased, so that during the last three weeks of his life it varied between 100° in the morning and 104° in the evening. On April 1st he was seen by Dr. Woods, of Dublin, who in a letter to me described the condition as one of great rarity.

On April 13th Dr. Etlinger reported that the difficulty in swallowing had greatly increased, and that this was probably due to the fact that the epiglottis had practically been destroyed by the disease. The patient continued to struggle on bravely against the disease. Some injections of tuberculin had been made by Dr. Bulloch's advice, but his temperature had been rather higher after them, and they were discontinued.

On April 22nd the report was that the patient had been losing ground rather rapidly, and that any chance of recovery was quickly disappearing. A patch of congestion was now noted at the base of the left lung.

On April 25th I went again to the sanatorium and found the poor patient in a very sad condition. Already on the previous day Dr. Bulloch, who had been to the sanatorium two days previously and had taken a swab from the patient's throat, informed me that this contained an enormous quantity of pneumococci and some staphylococci, whilst he had not examined for tubercle bacilli. On the other hand, Mr. Bowlby, who had been to the sanatorium on the previous day, informed me on the morning of my journey that he had been surprised at the enormous improvement in the pharynx, and partly so in the larynx, but that apparently infection had taken place at the bases of the lungs, and that the breathing was very bad.

On my seeing the patient on April 25th I was shocked at the amount of emaciation which had taken place since I last had seen him. During the last three weeks his temperature had regularly varied from 100° in the morning to 104° in the evening. He looked very grey, and his lips very cyanotic; the respirations were 30 to 36 a minute, and the pulse 150 to 160. He had to be frequently refreshed with oxygen whenever his breathing got laboured. On the other hand, the improvement which had taken

place in the pharynx was simply astounding, and even more marked than I had expected from Mr. Bowlby's report; *practically all the ulceration which has been described on previous occasions had disappeared without leaving any scar.* Only on the posterior wall of the pharynx there was still slight patchy ulceration. The epiglottis had for the most part been destroyed by ulceration, and the left half of the larynx was nearly immobile, but the laryngeal mucous membrane, which had been also ulcerated, had healed without showing much evidence of scarring. The pain in the throat had entirely disappeared, and the tenacious secretion which had for a long time been such a trouble to him was also quite a thing of the past. He coughed rather frequently, but not excessively so, and brought up white nummulated sputa, which were not fetid and showed no traces of blood. The voice was very weak—almost reduced to a whisper.

On examination of the lungs both were found to be extensively affected; rhonchi and crepitations were heard everywhere, but more particularly over the bases of both lungs, where fine crepitation predominated over other sounds, and where marked dullness was found on percussion. There was no evidence of a cavity in these parts. The mechanical difficulty in swallowing was still great. He has so far taken a fair amount of nourishment, but has several times had bad attacks of choking, and Dr. Etlinger suspected that particles of food might during these attacks have entered the lower air passages, and have set up infective pneumonia (*Speisepneumonie*), which is now present at the bases. I recommended rectal feeding, in addition to the food by the mouth, quinine and old brandy to be added to the nutrient injections, and hot poultices round the bases of the lungs.

On April 25th Dr. Mitchell Bruce went down to the sanatorium, and considered the case almost hopeless, but not absolutely so. He found the infection of the left lower lobe to be "massive" at that time, and considered it therefore not tuberculous, but due to pneumococcus infection of the nature of bronchopneumonia with pleurisy. He did not, as stated above, absolutely despair of the case, basing this slender hope upon the fact that, as the pneumococcus infection of the pharynx and larynx had yielded, there was a remote chance of the pulmonary affection doing the same.

By way of treatment he suggested regular saline injections, with brandy, to continue with food by the mouth, strychnine, and at night a little morphine with it, and of course continuation of oxygen.

Unfortunately, this treatment proved of no avail; the patient gradually sank on April 28th, and died very quietly in his sleep during the following night. No *post-mortem* examination was obtained.

Thus ended one of the saddest cases I have ever seen, and what one of his relatives wrote to me—namely, that "it seemed so hard, after so brave a fight, that all should end thus, but that the patient certainly had left behind him a memory of patient fortitude and heroic bravery, which surely must have left its influence on others"—is absolutely true.

Remarks.

The reason for describing the above case in such full detail is that pneumococcus invasion of the throat, and, more still, a combination of that disease with tuberculosis, is practically unknown. As a matter of fact, the various distinguished members of the profession who kindly lent their help in the management of the sad case, one and all stated that they had never seen anything similar. It seemed, therefore, desirable to assist further observers, and to enable them to build up a clinical picture of the disease, by describing the features of the first instance observed of such a combination in full detail. That the characteristics of pneumococcus invasion were blurred in the present instance by the supervention of tuberculosis there can be no doubt. When first the tumefaction of the larynx above described came into being, I anxiously asked myself whether it was possible that pneumococcus invasion of the larynx should thus mimic tuberculosis of that part, and during the whole remainder of the course of the disease it was a perfectly open question how much of the appearances seen in the larynx were due to tuberculosis, and how much to pneumococcus infection. On the other hand, there could be no doubt that the pharyngeal affection from first to last was predominantly, if not exclusively, due to the pneumococcus invasion only. A proof of this is given not merely by the repeated bacteriological examinations, but above all in the fact that in the last four weeks before death occurred, the pharyngeal ulceration, which had been so long and so extremely troublesome, practically disappeared without leaving any loss of substance, a fact which is quite incompatible with the idea that the pharyngeal ulceration, too, might have been tuberculous.

One of the most interesting features is Dr. Bulloch's report, according to which the scrapings from the pharynx at one time yielded an almost pure culture of pneumococci, those from the larynx an equally characteristic culture of tubercle bacilli. This fact, I think, shows conclusively the mixed character of the infection, and, taken in conjunction with the course of the illness, demonstrates the fact that the tuberculous infection supervened upon the primary infection. Very interesting, too, is the fact that, whilst the affection clinically began as enlargement of the lingual tonsil, which for a time subsided, at a later stage of the disease ulceration and sloughing in that region occurred, and that the scrapings from the ulcerated surface in this region showed the presence of pneumococci.

With regard to the complications, which supervened later on, it is difficult, if not impossible, to say which part was played by, and how much of them was due to, each of the infecting micro-organisms. The first signs clinically observed in the chest were quite characteristic of ordinary tuberculosis. The later phenomena left it quite undecided whether the progressive changes were due to tuberculosis only, or to the combination of that disease with pneumococcus infection, whilst the final phenomena might have been caused either by "foreign-body pneumonia" (*Speisepneumonie*) or by a sudden increase of virulence of the pneumococcus infection alone. The latter possibility finds support in Dr. Mitchell Bruce's statements.

I do not attach exaggerated importance to the statements of the patient himself, who dated the aggravation in the condition of his throat from the inoculation with pneumococcus vaccine, which was made on January 24th, but I can say positively that in this case, as well as in the first described by me, and in which also a pneumococcus vaccine was used, no improvement at all resulted from the employment of this method. The only remedy, in fact, of the very many which were used in the long course of this case which proved of *any* value were the anaesthesin insufflations, which, although they did not entirely abolish the difficulty in swallowing, yet materially alleviated the pain experienced during the act of deglutition. The effect of the remedy was not diminished by its long use.

It must be hoped that further contributions will shed more light upon the occurrence, pathogenesis, clinical features, and treatment of the disease, which, although hitherto undescribed, cannot be exceedingly rare, as is shown by the fact that in the course of three years 3 cases came under the notice of one single observer.

Remarks

ON

ACUTE PNEUMOCOCCUS INFECTION OF THE PHARYNX.

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THE first three months of the present year have been remarkable for the prevalence of pneumonia in Chester and the surrounding district. So striking a feature has this been in my own practice that I have been at pains to ascertain from other medical men practising in the neighbourhood whether their experience has coincided with my own in this respect, and the replies I have received convince me that such has been pretty generally the case.

With a view to gain something like an accurate estimate of the number of cases I have, with the kind permission of Dr. Thomas (Medical Officer of Health for the city), examined the returns of deaths from pneumonia in the city of Chester during the first three months of each of the years 1905, 1906, 1907, 1908, and 1909.

It will be evident that there are so many sources of fallacy in such an inquiry—the prevalence at one time of measles with secondary pneumonia or broncho-pneumonia; at another time of whooping-cough; again of influenza—that one was not surprised to find the results confusing, and tending but little to elucidate the question of the incidence of pneumonia primarily due to pneumococcic invasion. Again, the varying severity and death-rate of any particular epidemic would render the mere enumeration of the number of deaths anything but an accurate estimate of the number of cases of the affection.

The figures, such as they are, are appended:

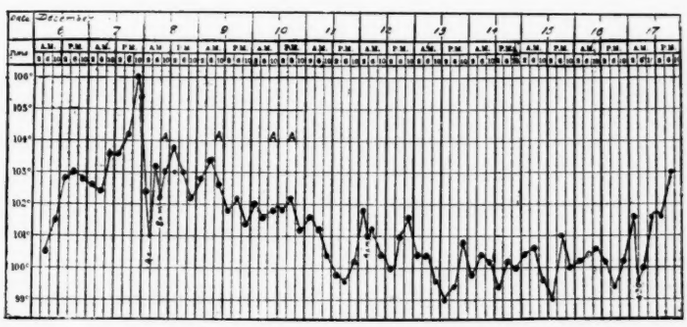
Deaths Returned either as "Pneumonia" or "Lobar Pneumonia."

January 1st to March 31st,		1905	...	2 cases.
"	"	1906	...	8 "
"	"	1907	...	10 "
"	"	1908	...	3 "
"	"	1909	...	11 "

It occurred to me that more useful information could be gained by finding the number of cases of acute lobar pneumonia which had been treated in the wards of the Chester Infirmary during the first three months of the present year. The cases had all been under the observation of one medical man—the house physician, Dr. Stanley Wood, who had every opportunity of judging of their applicability to such an inquiry, and to whom I am indebted for the return.

There were 28 cases of lobar pneumonia treated in the adult wards, and 5 in children under 5 years of age during the period January 1st to March 31st, 1909. Bearing in mind the fact that the hospital contains only 118 beds, including medical, surgical, and ophthalmic, and that the average number of beds occupied is 102, I think this is a convincing proof that pneumonia has been unusually prevalent during the period in question.

About the end of January I saw several cases of pharyngitis with fever and considerable enlargement of the cervical glands, the latter being a prominent feature of the cases. The submaxillary lymphatic glands, the deep cervical glands under the sternomastoid, and also the glands below the lobule of the ear were enlarged, forming a mass which, in the early stage, might well lead one to make a diagnosis of mumps (an experience which fell to my own lot in one of my cases). The glands on both sides of the neck were enlarged, but more extensively on one side. The accompanying fever was not unusually high, 102° to 103°. The onset was sudden; the whole of the back of the pharynx was red, inflamed and swollen. Sometimes the tonsils were considerably enlarged, with follicular concretions visible. The fever was of short duration—about forty-eight hours usually, with slight rise of temperature in the evening for several days longer.



A, Injection of antistreptococcus serum 10 c.cm., with the exception of 20 c.cm. on December 9th.

I was puzzled by the marked adenitis, which was quite unusual, and thought that probably influenza was at the bottom of the mischief. So far as my own experience went, however, the annual visitation of influenza had been delayed this year, and I had not then seen any cases of true influenza.

On January 25th my housemaid was taken ill with sore throat, with fever and glandular swelling. The attack after about a week culminated in a quinsy, which she had had several times before, and to which she was susceptible. Early in February another of the maids in my house was down with sore throat and adenitis, and then my four children were successively attacked. Meanwhile I awoke one morning myself to find my neck stiff and painful on one side with the glands under the sternomastoid swollen and tender. I had not been conscious of any sore throat. The soreness disappeared and the swelling subsided in the course of twenty-four hours, and then the same process was repeated on the other side of my neck, to subside without further trouble in a day or so.

One of my children, a little girl aged 5, developed the affection severely. The whole of the pharynx was uniformly red and swollen, the glandular enlargement was well marked; the temperature 103°, with rapid pulse. The severity of the inflammation induced me to take a swab from the throat and inoculate an agar tube on February 24th. To my surprise I obtained a pure culture of the pneumococcus. The throat was painted frequently with a solution of mercury perchloride, 1 in 4,000; the inflammation began to subside with the fever, the glandular enlargement, however, continuing unchanged. In the course of a day or two the child had acute pain in the ear, with a fresh rise of temperature to 102°. An antiseptic dressing was applied to the ear to anticipate the abscess which was expected; it burst into the dressing; the pus was inoculated on an agar tube, and again a pure culture of pneumococcus was obtained. The same course of events followed in the other ear. The aural abscesses were treated with strict antiseptic precautions, and the discharge ceased in each case in about fourteen days. Hearing returned normally. The cervical glandular enlargement subsided slowly (as it had done in all the cases), and took a month or six weeks to disappear completely.

I took a swab from the throat of another of my children, aged 3, who was attacked by the pharyngitis, and found the pneumococcus in great preponderance, but mixed with a few staphylococci. In this case there was more marked affection of the tonsil, and no aural complications developed. In all other respects the case was similar. I exhibited Lumière coloured photomicrographs of the pneumococci, and also the growths on agar, at the meeting of the North Wales Branch of the British Medical Association at Colwyn Bay on April 20th. I saw other cases of the affection (13 in all) in which the main features described above were reproduced. Unfortunately, no cultivations were made, except in the 2 cases mentioned. There was no ulceration of the throat or membranous inflammation in any of them.

With regard to the origin of the affection I would sum up my conclusions as follows:

1. These cases were not influenzal in origin, for the usual visitation of influenza came later, and several of my cases afterwards developed influenza, which ran a typical course.

2. Although I could not trace exposure to infection from pneumonia in any of them, it was unusually prevalent at the time; indeed, my colleague and next-door neighbour, Dr. King, died of pneumonia on February 24th, at the very time when the cases described above were under investigation.

3. There can be no doubt that in the case of the two of my children from whom I took cultivations the infection was pneumococcal, and, taking into consideration the great similarity of the other cases, the remarkable glandular enlargement which was a feature of all of them, and the fact that the other cases in my own house were exposed to the same conditions as the two investigated, I think there can be little doubt that the pneumococcus was responsible for the trouble in all.

The following case, which I saw in December, 1908, with Dr. Storrs, of Overton (to whom I am indebted for some of the notes of the case), and Dr. Lloyd, of Chirk, must, I think, be classed as one of pneumococcic pharyngitis with general septicaemia.

F. H., aged 49, returned from a shooting box in Scotland in November, not feeling well; easily tired. December 1st, out shooting; felt ill, throat "rough." December 2nd, seen by Dr. Storrs; redness, covering the right tonsil; back of the pharynx swollen and red; temperature 101°; pulse rapid; temperature 102° at night. December 3rd, temperature 102°; inflammation spreading to left tonsil; whole pharynx in-

tensely inflamed and infiltrated; no membrane; not much glandular enlargement. December 4th, temperature 101.5°; diphtheria suspected; 4,000 units antitoxin administered. December 5th, temperature still 101.5°; 3,000 units given. December 6th, seen by Dr. Lloyd also; report on throat swab received, "No diphtheria"; urine nearly solid with albumen; pulse rapid and weak; temperature rose steadily. December 7th, temperature, at 10 p.m., 106°; pulse 152.

December 8th. In the early morning a patch of pleurisy appeared on the right side. Seen by me midday with Drs. Storrs and Lloyd, the patient looked very ill, tongue dry and brown, slight herpetic eruption on the lips, uniform red glazed condition of the whole of the pharynx without either ulceration or membrane; at the right base a patch of dullness with bronchial breathing about 2 or 3 fingerbreadths in extent; no abnormal sounds of the heart; spleen not enlarged. We thought that in all probability it was a case of streptococcus infection from the throat. Ten c.cm. of polyvalent anti-streptococcus serum were administered, and tubes of agar, gelatine, blood serum, and bouillon (ten in number) were inoculated with blood taken from the median basilic vein at 7 p.m. On the morning of December 10th abundant growth of pneumococcus was found in all the tubes; meanwhile 20 c.cm. of the serum had been injected on December 9th, and the patient's condition had improved materially; temperature and pulse falling, tongue becoming moister; taking well, sleeping quietly; 20 c.cm. serum again on December 10th.

The daily administration of serum was continued with evidently good results. The albumen diminished in the urine until only a trace remained. The hypodermic administration of strychnine was pushed until twitching appeared. The temperature fell to 99° on the 15th, and we had great hopes of his recovery. The pulse, however, continued quick, and his exhausted heart began to fail on the 16th. Strophanthin and digitalin had been tried without success. He died on the 17th, with the usual premonitory rise of temperature, 103°. During the last few days of his life there was a haemorrhagic punctiform rash on the thighs. The albuminuria increased again in the end. A sore on the shin from burn during a hot-air bath remained in an unhealthy condition covered with a greyish slough.

Although no cultivation was made from the throat, there seems to me every reason to conclude that the primary source of infection was in the pharynx, and that it was pneumococcic. There was undoubtedly later a patch of bronchopneumonia at the right base, but it interfered in no way with the course of the case. There was neither cough nor expectoration at any time; the respirations were not quickened by it, and with the exception of the pleuritic pain which ushered in its onset its presence could only be ascertained by careful examination. It did not make its appearance until the main features of the case were well advanced.

The exact form which pneumococcic infection of the pharynx may take is still undetermined. Cornil described a case of abscess in the tonsil due to the pneumococcus; Jaccoud a case of pseudo-membranous pharyngitis of similar origin. Rendu and Boulloche[1] in 1891 recorded two cases of acute pharyngitis with sudden onset, accompanied by high fever of short duration, occurring in individuals who were exposed to pneumococcic infection, and slept in the same room. The pneumococcal origin of the infection was proved by inoculation of rabbits. In neither of these cases was there either ulceration or false membrane. In their main features they resemble the cases I have described above, but there was no great glandular enlargement.

In 1901 Monro[3] described a case of membranous pharyngitis which he considered to be of pneumococcal origin, as also have Bezançon and Griffin.[2] The latter observers made use of the agglutinative serum reaction to prove their case.

In the discussion which followed the paper by MM. Rendu and Boulloche (referred to above), Netter summed up the several types of pneumococcal angina as follows:

Suppurative Pseudomembranous	proved.
Follicular Inflammatory Herpetic	doubtful.

Recently (December, 1908) Sir Felix Semon[4] described several cases of ulcerative pharyngitis with perforation of palate, and brought convincing evidence to show that they were pneumococcal in origin.

References.

[1] Rendu et Boulloche, *Bull. et mém. soc. méd. d'hôp. de Paris*, 1891, 3s., viii, 219-228. [2] Bezançon et Griffin, *Presse méd.*, Paris, 1900, ii, 294. [3] Monro, *Glasgow Med. Journ.*, 1901, lvi, 274-277. [4] Semon, *Med. Magazine*, December, 1908.

Observations

ON

THE THERAPEUTIC VALUE OF THE PNEUMOCOCCUS VACCINE IN THE TREATMENT OF PNEUMONIA

AND SOME OF ITS COMPLICATIONS.

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The pneumococcus is, perhaps, next to the *coli* bacillus and the staphylococcus, the most constant parasite of the human race. Mackenzie[1] quotes statistics from various authorities, who state that 50 per cent. and upwards of normal individuals harbour this organism. "Hiss says it is more than probable that every individual acts as a host to organisms of true pneumococcus type at some time or other during the winter months, and probably at repeated intervals. The organisms leave the body with the saliva or sputum, and in either moist or dried sputum may remain virulent for a considerable time."[2]

That the pneumococcus of Fraenkel is the cause of pneumonia has been established since 1889;[3] indeed previously, in the year 1886, he showed that a rabbit which had recovered from an attack of pneumonia was subsequently immune to a lethal dose of the organism.[4] It is, therefore, unnecessary to burden the reader with what is now ancient history.

It may be taken as proved that practically every case of acute pneumonia is a case of pneumococcic septicaemia—that is to say, the infecting organism is not confined to local areas, but may be recovered from the blood.* The crisis in septicaemic conditions, whether it be that of pneumococcus or streptococcus, is determined by the amount of protective material the invaded host is able to elaborate in a given time. When this elaboration is at a sufficient rate to inhibit the reproduction of the infecting organism, it is probable that the clinical manifestation of a crisis will occur. In 1891 the Klemperer brothers explained that the crisis in humans occurs at the moment when the poisonous products manufactured by the bacteria located in the lungs are present in the circulation in amounts sufficient to call forth in the tissues the reactive change that results in the production of the antidotal substance which has the power of rendering the poison inert. To this end they prepared an antiserum, which they used in 6 cases. There was in 4 a temporary improvement, and 2 cases got well.

The Klemperers apparently did not realize that they were dealing with a general infective condition, and failed because their experiment consisted merely in the neutralization of a certain quantity of toxin.

The decade 1890–1900 may be described as the era of serum therapeutics, when antiserums were used in many infective processes, but only attained success in that of diphtheria, a local infection producing a general toxaemia. In this connexion the names of Washbourne, Eyre,[12] Pane,[13] Wilson, Marchaux, Tyler, and Parr should be mentioned. Bokenham, indeed, showed that antipneumococcic serum had no bactericidal effect upon living pneumococci.

In the course of these serum investigations animals were necessarily inoculated with attenuated cultures, increasing in later inoculations in virulence. Foa discovered that animals thus immunized against one strain of pneumococcus were not necessarily protected against others, and Washbourne and Eyre[12] found that Pane's serum protected against four out of five varieties, but not against the fifth. Here, then, arose a second factor, which militated against successful immunization at the bedside.

Wright's work on staphylococcic and tuberculin inoculations from 1902 onwards introduced the present era of vaccine treatment. He himself in his earlier papers argued that inoculation was indefensible in acute infective conditions, because of the probabilities of auto-inoculations. This supposition, based on the results

* Rosenow found pneumococci in 160 out of 175 in 1905; Fraenkel, found pneumococci constantly in the blood; Prochaski found pneumococci in blood of 50 consecutive cases, 1901.

obtained in tuberculous infections, rendered it extremely improbable that bacterial inoculation would be of any value in combating septicaemic conditions; in fact, such a course would increase the disaster.

The analogy, however, between tuberculous infection and an acute septicaemic condition is, happily, not a true one. In the former disease, when fulminating, necrotic foci are continually liberating dead organisms into the tissues, there to act as a bacterial vaccine. In pneumonia the bacteria are of a different type; they have not anatomically the same chance of getting into contact with the tissues, but remain in the lung, and circulate in the blood, until their life-history is done and they are digested. It may be that the spontaneous crisis in pneumonia and acute erysipelas may be due to some such process gradually building itself up.

With some such conception in his mind Macdonald[5] studied the opsonic index in 8 cases of pneumonia, and found it low during the disease until the crisis was reached, when it suddenly rose as high as 1.6. He laid the foundation of vaccine treatment in pneumonia by producing artificial crises in rabbits infected with the pneumococcus by inoculating them with a vaccine made from the infecting strain. He was able at will to produce an artificial crisis, and recovery if he inoculated the animal with a vaccine made from the same strain with which it had been infected. Control rabbits, not inoculated, died. This research carried out in the bacteriological department of the London Hospital does not appear to have been followed up in hospital treatment.

Preparation of the Autogenous Pneumococcic Vaccine.

It is desirable to prepare the vaccine from cultures of the patient's own pneumococcus. If this is impossible, a stock vaccine made from a particularly virulent strain may be used.

It usually happens that the more virulent the pneumococcus, the more readily does it grow *in vitro*. On several occasions sufficient culture has been obtained after twelve hours' incubation from which to make the vaccine. The statement, therefore, which has been frequently made, that it is impossible to grow enough pneumococci to make a vaccine from in so short a space of time that it may be available, is untrue and misleading.

Pure cultures from chronic infections are difficult, and sometimes impossible, to obtain on account of rapidly growing contaminations. In acute pneumonia, however, if the rusty sputum be washed in sterile saline, and penetrated with a hot wire, a pure culture of the pneumococcus is, more often than not, obtained.

Agar-agar slopes should be used which have previously been smeared with a thin film of blood drawn from the finger. The latter should be washed, dipped in ether, and flamed. The ether flaming should be repeated three times. A narrow tape is wound twice round the end joint, and the skin deeply pricked with a sterilized needle or glass point behind the nail. Squeezing the pulp pumps out sufficient blood, which is then sucked up with a sterile Wright's pipette and nipple, and so conveyed direct to the agar slope. Three drops are sufficient, and if these be mingled with the water of condensation in the tube, a sufficient film can be spread by gravitation over the surface of the slope. For safety, the tube should be incubated for twelve hours before inoculation. It rarely happens, however, if this simple technique is followed, that any contamination with a skin staphylococcus occurs.

It not infrequently happens that sputum is not available. It is usually possible in acute pneumonia to recover the pneumococcus from the blood, if sufficient blood be drawn. This is most simply effected by passing the sterilized needle, attached to a large 20 c.cm. syringe (the "record" is, perhaps, the most suitable), into the median basilic vein, already distended by compression, and withdrawing 10 to 15 c.cm. of blood; 5 c.cm. of 2 per cent. citrate in normal saline, previously drawn into the syringe, will obviate clotting.

The blood may then be introduced into ten agar sloped tubes. Sufficient growth will be obtained from the surfaces to prepare a vaccine without subculture. Care must be taken in both the above methods to keep the tubes upright and not to reflood the slopes with the blood which has settled at the bottom of the tube, otherwise it will be impossible to obtain clean emulsions of the pneumococcus for standardization.

CASE I.[6]

At Christmas, 1905, a lad named A. had a typical left basal lobar pneumonia. His crisis was unsatisfactory, and during January, 1906, he ran a variable temperature, normal or nearly normal in the morning, rising at night to 101° and 102°. There was a small dull patch at his left base, but there was no pleurisy. He was losing ground and weight week by week. His index to tubercle bacilli was normal, and the sputum contained none of these micro-organisms. There were, however, quantities of pneumococci present, and to these his index was low. He was inoculated towards the end of January with a pneumococcic vaccine made from cultures obtained from a case of chronic pneumococcic infection involving the knee-joints. This vaccine, although helpful in the case from which it was derived, had no effect on A.

In February, his condition becoming more serious from continued fever and loss of weight, he was seen in consultation with Dr. H. P. Hawkins. He agreed that probably there was a small consolidated patch at the left base, and that there was no pleuritic effusion. I suggested inoculating the lad with a vaccine made from his own strain of pneumococcus. After some little delay this request was granted. Within thirty-six hours of his inoculation all the usual clinical phenomena of resolution by crisis occurred, and the lad made an uninterrupted recovery. His index before the inoculation was 0.7, and at the crisis shot up to 1.4, whence it gradually declined to normal six days later. It occurred to me that possibly the introduction of the vaccine was coincident with the rupture of a small abscess. The microscopic character of the expectoration, however, negatived this, and later no physical signs were present to support this supposition. At the present time, three years after, the lad is perfectly well and has been in good health since his convalescence.

It would appear that the small dose of vaccine—50 million—was the determining factor in starting the sudden process of self-immunization into action.

CASE II.[7]

On April 30th, 1906, I was asked by Dr. Brooke, of Chingford, to see a case of pneumonia.

The patient, D., aged about 47, was a big man. He was seen on the fifth day of the disease. There was slight consolidation at the left base, definite peritoneal infection, distension of the bowel, effusion into his left ankle-joint, and thrombosis of his left posterior tibial vein. He was in a state of acute delirium alternating with dull apathy. His sputum showed pneumococci which grew rapidly on blood agar. His index was 0.4. A vaccine was prepared, and he was inoculated with 10 million dead pneumococci on May 2nd in the afternoon. Within thirty-six hours his condition began to improve, his peritoneal, stomach, and intestinal conditions were better, and the effusion in his ankle began to subside. His temperature did not, however, drop much until a second inoculation of 30 million was given on May 4th. Observation of his opsonic index taken twenty-four hours after the first inoculation showed that it had risen to 1.2, but by the time the second was given it had fallen again to 0.6. After the second inoculation his temperature fell from 102° to 99° on the morning of May 6th, rising during the day to 102° again. He was accordingly inoculated again with 50 million in the afternoon of May 6th. His temperature fell continuously during the night and the whole of May 7th, rising on the morning of May 8th to 101.° It will be noticed that here the temperature became for the first time inverted, no doubt on account of the wearing out of the immunization. On the afternoon of May 8th he was inoculated for the fourth time with 50 million. On May 11th, 12th, and 13th, his temperature was normal in the morning, rising to 100° at night. During this time his mental condition varied between stupor and acute mania, and, indeed, this condition continued until about May 20th.

The sole remaining focus of infection was apparently in the left posterior tibial vein. On May 14th a fifth inoculation of 50 million was given. On May 15th his temperature never rose

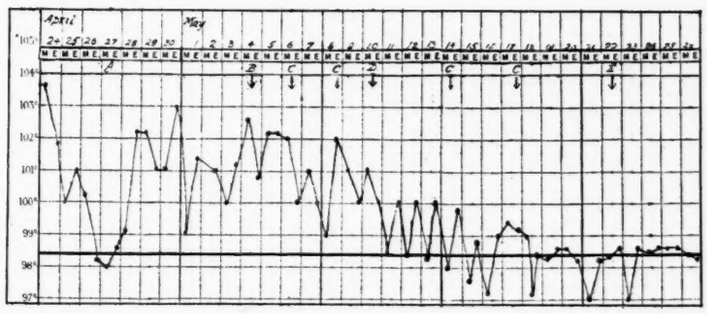

Chart 1, Case II.—A, Abortive crisis relating only to lung; B, 30 million; C, 50 million; D, 20 million; E, 30 million.

above 98.8°. On the morning of May 17th he was not so well again, and his temperature rose to 99.4°. A sixth inoculation of 50 million on this date was given, and from now onwards it remained practically normal. A seventh and final inoculation of 30 million was given on May 22nd, and from that time he became himself. He made a perfect recovery at the time. At the end of last year (1908) he came to see me with a large ulcer in the lower third of his leg. This had gradually developed during 1903, no doubt due to the original blocking of the posterior tibial vein.

This case was clinically rather one of pneumococcic septicaemia, in which the lung infection was but a small incident. The pneumococcus was recovered not only from his sputum, but from blood drawn from his median basilic vein. The rapidity with which the graver signs of infection yielded to inoculation was remarkable, and I think that the fever was prolonged by the thrombotic condition of his left leg. It appears, too, that the septicaemic condition is not a contraindication for bacterial inoculation. As regards this point, Douglas[6] had successfully inoculated a case of acute septic endocarditis in the previous March (1906) with a streptococcic vaccine derived from the patient's own organism, which had been recovered from the blood. In March, 1908, a case of acute streptococcic septicaemia, with local erysipelas of the head and face under my own care, responded at once to inoculation. The temperature was 105°; there was low muttering delirium with subsultus, picking of the bedclothes; respirations were 40, and pulse 140. An inoculation of 20 million streptococci was given at 10 p.m., and during the night profuse sweating occurred. At 8 a.m. the temperature was 98.8°. No opsonic index was made.

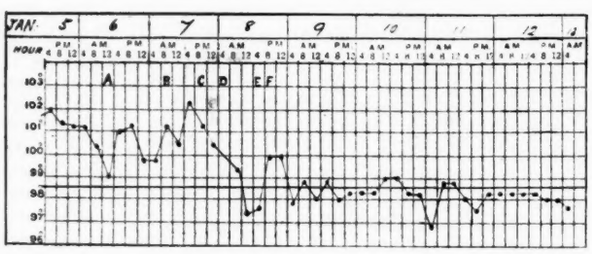

Chart 2, Case III.—A, Abortive crisis; B, 60 million, 11.50 p.m., enema; C, 60 million, enema; D, too delirious; E, 4.50 p.m.; F, 9 p.m.

CASE III.

Mr. W. A., aged 43, was seen by my colleague, Mr. G. L. Parsons, who has kindly furnished me with the clinical history.

On December 29th, 1907, he was feverish and slightly jaundiced. On December 31st he developed a cough in addition to the other symptoms, with viscid sputum and increased V. R. at the right apex. On January 1st, 1908, his liver was found to be enlarged, with pain and rigidity in the abdomen. There were definite signs of pneumonia at the right apex, with rusty sputum. On January 2nd the pneumococcus was observed in the sputum, and cultures on blood agar made. On January 3rd the patient sweated profusely; there was general improvement, and signs of resolution at the right apex. On January 4th he became worse; the pain and distension of the abdomen were more marked; there was evidence of infection of the left apex. On January 5th his pulse-respiration ratio was 2 to 1 or less; he appeared very emaciated and suffering from general toxaemia.

On January 6th the left apex and upper half of the left lung were consolidated. Pulse (120) feeble; respirations, 70; mental condition, excitable and delirious. The vaccine having been prepared, a dose of 60 million was given about 11 p.m. January 7th: Little improvement was noticed, and the dose of 60 million was repeated at 8 p.m., twenty-two hours after the first. The temperature fell two degrees that night. January 8th: There was marked improvement. The abdominal pain and distension disappeared, and the consolidation of the left lung began to resolve. The temperature rose one degree, but on January 9th fell to below normal.

Here again the septicaemic condition was arrested within twelve hours of giving the vaccine, though not until the second dose. At the bedside the case appeared to be hopeless, and the vaccine was given as a last resort. The intoxication was very profound, and it was not until January 12th or 13th that he recovered his normal mental state. The mental condition resembled that of Mr. D., periods of apathy alternating with an active fighting delirium.

He made a perfect recovery, and is now (1909) in good health.

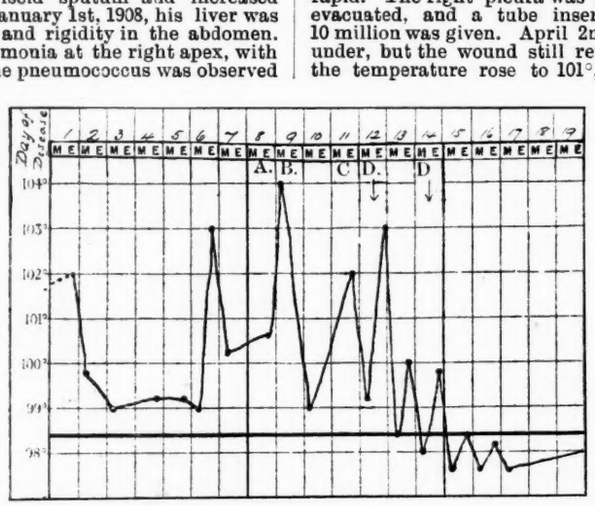

Chart 3, Case IV.—A, Aspirated chest, pus; B, operation; C, wound fomented; D, injection of vaccine.

CASE IV.

W. F., boy, aged 3½, also under the care of Mr. G. L. Parsons, was seen first on March 13th, 1908. He had been ill already for about ten days. His temperature was 102°. There was pain on the right side of the chest and poor expansion. There were some bronchitic sounds on both sides, and a patch of dullness with crepitations half way down the right side in the mid-axillary line. Complete dullness with loss of breath sounds at the right base. On March 15th there was some improvement in physical signs and symptoms. The temperature fell to 99° for the next two days. On March 18th the temperature rose rapidly to 103°. Pulse and respirations increased in frequency, and fluid in the right pleura extended high up. The urine became dark, and there was increased frequency of micturition. Total quantity passed was small; it contained albumen, pus, and casts.

On March 20th the right pleura was aspirated and found to contain pus. A film showed quantities of pneumococci. Cultures on blood agar were made with a view to the preparation of a vaccine. On March 21st the temperature rose to 104°; a portion of the seventh rib on the right side was resected and free drainage established. On the morning of March 22nd the temperature had fallen to 99°, and there was general improvement. On March 22nd the temperature was 99°. The discharge from the wound had become serous. More urine was passed, which was better in character.

On March 23rd there was constant cough, the temperature rising to 102°. The urine again became scanty and contained albumen; there was incontinence. The drainage tube was removed and the wound, which again had become purulent, was fomented. The temperature fell on the morning of the 24th, but again rose during the day. As the condition was now becoming very serious, 10 million of the vaccine, which had been prepared, was injected. The next morning (March 25th) the child's temperature was normal, but rose to 100° in the evening, and an injection of 10 million was given. There was marked general improvement.

On March 26th a third inoculation of a similar amount was given. The general condition had now improved; the wound discharge became serous again, and the urine, increasing in quantity, was free from albumen, blood, and casts. The pulse and respiration for the next two and a half days was normal.

On April 1st his temperature rose suddenly to 103°, the wound was found to be purulent, and the urine again became thick and contained albumen. Pulse and respiration were feeble and rapid. The right pleura was explored, a small pocket of pus evacuated, and a tube inserted again. An inoculation of 10 million was given. April 2nd. Temperature fell to 99° and under, but the wound still remained purulent. On April 4th the temperature rose to 101°, and another 10 million pneumococci was injected, as the urine was albuminous.

From April 5th onwards the temperature remained normal, the discharge became serous and gradually dried up. The urine gradually lost its albumen. To accelerate matters and prevent further flares of infection a further inoculation was given on the 6th. The child made a perfect recovery.

The influence of the vaccine was very noticeable, both on the discharge and on the urine, and it is remarkable how quickly so severe a pneumococcal nephritis, which was evidenced by the presence of blood casts and albumen, was each time checked and finally cured by inoculation. The rise of temperature on April 1st and the subsequent fall was no doubt entirely due to the pocketing of a small quantity of pus, and it would be hardly fair to give any credit to the inoculation on that date beyond generally improving the whole resistance of the patient.

As in the other cases, the lung seems to have cleared without much difficulty and the gravity of the complications were the final factors to be reckoned with. No opsonic indices were done. It would probably have been better if they had, as thereby the various rises of temperature might have been prevented by earlier inoculation. Anyhow, this case illustrates very clearly that it is possible to give a child repeated inoculations at short intervals, the sole guide being the temperature. If we remember that

probably in all these acute conditions the rise of temperature is almost coincident with the fall of resistance, as has been shown by Latham[7] in the case of pulmonary tuberculosis, the need for indices as a guide to inoculation seems in such circumstances unnecessary.

CASE V.

H. L., aged 36, under the care of Dr. Norman, was taken ill with left basal pneumonia on December 18th, 1908, at 1 a.m. The infection was of a very virulent type, and eventually extended to both lungs. He died on the morning of December 23rd.

I examined his sputum on December 18th, and found it contained many pneumococci and some *M. catarrhalis*. Cultures were made on blood agar, which grew with extraordinary rapidity, showing lanceolate, chain, and diplococcal forms. It was possible on December 19th to make 50 c.cm. of vaccine containing 80 million pneumococci per c.cm.

The first inoculation of 40 million was given on the evening of December 20th. "He was perspiring freely the first two days, and after the first injection it became more profuse, but otherwise there was no improvement in his symptoms, excepting the continual decrease in fever."

He was given a second inoculation on December 21st, and a third on December 22nd. After these two doses there was a slight rise, the temperature remaining at the higher level. "The abdomen was markedly distended, and, though there was no special vomiting or tenderness, I rather think he had peritonitis. He had a mottled, purplish rash over the abdomen and thighs not unlike that of typhus." There was albumen in the urine. The heart from almost the first became engorged and dilated, and Dr. Norman procured temporary relief by venesection.

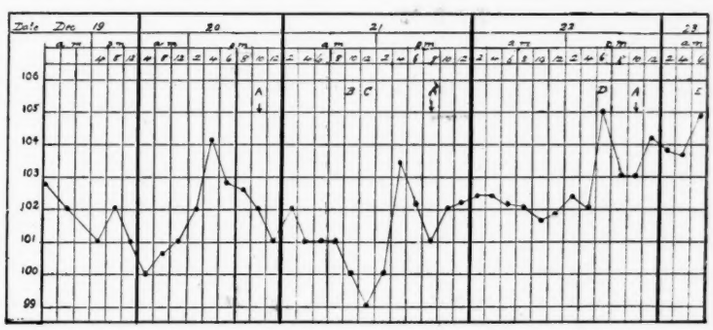

Chart 4, Case V.—A, 5 c.cm; B, hypodermic injection of morphine; C, after washing; D, sponged; E, death.

A study of the temperature chart indicates that, whilst possibly the first inoculation had some beneficial effect, the remaining two had none.

The remarkable rate of growth of the pneumococcus outside the body is an indication of its virulence.

CASE VI.

A. B., aged 60, labourer, was seen on December 27th. He had had a cough for a few days. His temperature was 102.6°, pulse 120, respirations 30. There was crepitation, bronchial breathing, dullness, and increased vocal resonance at the right base. His sputum was crowded with pneumococci. He was given 25 million of L.'s pneumococcic vaccine at 3 p.m. At 9 p.m. temperature was 103°, pulse 114, respirations 30. The consolidation had now extended to the middle lobe of the right lung. On December 28th, 10.30 a.m., temperature 103°, pulse 120, respirations 36, no further extension; 9 p.m., temperature 102.4°, pulse 120, respirations 40. December 29th, 11 a.m., temperature 102.3°, pulse 138, respirations 48; 11 p.m., temperature 102°, pulse 144, respirations 60. He was given 50 million of the same strain of pneumococcic vaccine. On December 30th the patient was moribund, and he died that evening.

In this case the patient was in a feeble state of health to begin with. The vaccine had no effect upon him, and he died of heart failure, the disease not extending during the last two days of his illness. Apparently, the toxic infection of his heart muscle, rather than a rapid extension of the disease, was the cause of death.

CASE VII.

Mrs. S., aged 63, was seen on March 27th. On March 26th she was seized with a severe bout of vomiting, and rapidly became ill. There was general bronchitis over the upper part of both lungs. There was consolidation of lower left lobe, with pain under the heart and failure of that organ. Ordered digitalis and carbonate of ammonia and brandy.

On March 26th the whole of the lower lobe of the left lung was solid. Temperature 100.6°, pulse 120, respirations 42. The pulse, though regular, was very feeble. The sputum was crowded with pneumococci; 25 million of L.'s pneumococcic vaccine was given. The heart did not respond in the least to stimulants nor to digitalis and ammonium carbonate, and she died at 8.30 a.m. the next day (March 27th).

The failure of the heart in this case was the cause of death, and the vaccine failed to produce the least result.

CASE VIII.

Mr. B., aged 58, a well-nourished man in good circumstances, had an influenzal attack of the gastric type lasting from April 4th to 8th, but with no lung symptoms. On April 12th he was seized with recurring rigors, and when seen had definite consolidation of the base of the left lung. Temperature 102.6° F., pulse 90, respirations 36. An inoculation of 25 million of L.'s vaccine was given at 6 p.m. At 10.30 a.m. next day he was breathing easily. Respirations 24, pulse 80, temperature 97.8° F. He had sweated profusely during the night. The left base was still slightly dull, but marked redux crepitations could be heard.

The crisis in this case occurred during the night, and after the administration of a vaccine obtained from a virulent fatal case (L.). It is reasonable to suppose that the vaccine was a factor in producing a crisis at so early a stage of the disease, between the second and third days at latest.

CASE IX.

W., female, married, aged 45, stated she had had attacks of asthma every winter, and for the last four winters this has been complicated with acute bronchitis. In the winter of 1906-7 *M. catarrhalis* and pneumococci were found in the sputum. Vaccines were made and used.

On February 17th, 1907, an inoculation of the mixed vaccine, 10 million of each, was given. The temperature dropped four hours after inoculation from 99.8° to normal. The cough became looser, and the asthma was relieved.

On February 21st the cough was dry and troublesome, the sputum contained few pneumococci, but many *M. catarrhalis*. An inoculation of the mixed vaccine was given as before. The next day the cough was looser again, but still paroxysmal; the index to pneumococci was 0.93.

February 25th, 26th, cough was more troublesome; the sputum contained chiefly *M. catarrhalis*; a few pneumococci. On February 27th, inoculation with *M. catarrhalis* vaccine from another strain (Addison), 0.5 c.cm., and on February 28th cough much easier.

March 1st, cough worse; inoculation with Addison's *M. catarrhalis* vaccine 1 c.cm. March 2nd, cough easier. March 3rd, inoculation as before; had a good night. March 7th, improving; more pneumococci in sputum; gave 0.5 c.cm. of her own mixed vaccine. On March 8th the sputum contained less pneumococci and *M. catarrhalis*.

March 9th gave 0.5 c.cm. of her mixed vaccine; no cough. From this time she remained fairly well.

During the following winter, 1907-8, she was under other care, and had no inoculations. There was a long period of several weeks of acute bronchitis with fever, and she did not really improve until the spring.

On November 7th, 1908, she noticed a running from the nose; next day the nasal discharge was examined and found to contain practically a pure culture of *M. catarrhalis*. She had a bad cold in the head. Asthma developed two days later, and on November 12th the temperature rose suddenly to 102°. The sputum contained quantities of pneumococci and a few *M. catarrhalis*. Cultures and plates were made, and eventually a vaccine containing 160 million pneumococci per c.cm. was obtained.

On November 14th, her temperature remaining up over 100°, an inoculation of 80 million was given. The temperature came down to 99.6° during the night; the expectoration was more abundant. On the evening of the 15th the temperature rose to 100.6°, and another 80 million were given. She had a good night, and on the 16th her temperature was 98.6°. The expectoration became rusty and abundant; the breathing deeper and easier. On November 17th, 18th, and 19th the temperature remained down; the sputum contained a few pneumococci and *M. catarrhalis*.

On November 29th there was an increase of catarrh with asthma; no rise of temperature. Sputum showed *M. catarrhalis* with a few pneumococci. Cultures were made. On December 2nd the nasal discharge showed *M. catarrhalis* alone. On December 6th an inoculation of a *M. catarrhalis* vaccine made from the above strain, 30 million, was given. Exacerbations of asthma were treated with the mixed vaccines on December 11th, 14th, 23rd, and 27th. In each case the asthma was relieved and the expectoration became looser and more abundant.

During January, 1909, she was practically free, only a few *M. catarrhalis* appearing in the sputum.

On February 2nd there was a slight return of asthma, and the mixed vaccine was again injected.

This case is interesting by itself. The details of two attacks in 1906–7 and 1908–9 are similar, as regards the infection, the necessity for frequent inoculation, and the results of the inoculations. The prevalence of the micro-organisms in the sputum has proved a very fair guide as to the variety of vaccine; and, indeed, this has been sub-

stantiated in a number of catarrhal infections investigated. In the last attack very important evidence was obtained as to the rôle the *Micrococcus cartarrhalis* plays in these mixed infections. In this case the *M. catarrhalis* paved the way for the pneumococcus to become virulently pathogenic. In another case recently the *M. catarrhalis* was the forerunner of a general infection with the Friedländer pneumobacillus, and Allen and Benham both record cases of mixed infection also with *M. catarrhalis* and *B. septus*.

I think, perhaps, in both attacks a stronger vaccine of *M. catarrhalis* might have been used; but in this case it was difficult to grow enough at one time. In the second attack the inoculation of December 16th produced a definite resolution sputum with a fall of temperature to normal—phenomena similar to cases of a definite lobar type.

CASE X.

E. P., aged 58, male. Gave on September 17th, 1908, a history extending over several years. He had been liable he said, to repeated attacks of nasal catarrh, with loss of smell and taste. Latterly these had been more severe; the bronchial tubes had become affected, and he had several times been laid by with jaundice and catarrh of the stomach. Extreme prostration and muscular weakness followed after an attack. Cultures made from the nasal purulent discharge showed *M. catarrhalis*, Friedländer's pneumobacillus, *Bacillus septus*, and a few lanceolated pneumococci in pairs. Vaccines were made of *M. catarrhalis* and Friedländer, and were given during the next three weeks with little result. The indices to Friedländer were normal. On October 14th, 1908, he started a fresh cold. Cultures of the sputum were made on blood agar on the 17th, and showed more pneumococci, but a preponderance of Friedländer. More Friedländer vaccine was given, with the result that this organism was wiped out of the sputum, and on the 28th the sputum apparently contained only pneumococci. Cultures on blood agar were made and a pure strain of the true pneumococcus obtained; a vaccine was made from this, 95 million per c.cm. in strength. On November 4th he had more or less recovered from this cold, and his index to the pneumococcus was 1.7. He was inoculated with 50 million pneumococci.

On November 7th his index for pneumococcus was 2.2; sputum of the 8th contained pneumococcus, *M. catarrhalis* and *B. septus* in the shed squamous epithelial cells, as well as Friedländer. On November 11th he was inoculated with 50 million pneumococci. His index to pneumococcus was 2.0. On November 14th the sputum was less, thin, and clear, but contained all the above micro-organisms. For the first time his general condition was better. He coughed less and was more vigorous. His appetite was returning and his colour improving.

I determined, as my results with *Micrococcus catarrhalis* and Friedländer vaccines had been negative, and as he had obviously improved after two inoculations with the pneumococcus vaccine, to continue the latter, particularly as in this organism alone he had shown an index differing from the normal. Inoculations were given on November 25th, December 3rd, 14th, and 23rd. During this time he remained free from catarrh, and was in excellent health and spirits. He expressed himself as being in much better condition than he had been for several years, although he had been working the whole time at high pressure in the city. During January, 1909, he was so well that inoculations were unnecessary.

On February 2nd, 1909, the sputum was rather thicker and more abundant. It contained *M. catarrhalis*, pneumococcus, *B. septus*, and Friedländer's pneumobacillus. The *M. catarrhalis* was in large amount. As severe colds had been going through his office, and from other sources I was aware that there was an epidemic of *M. catarrhalis* abroad, I gave him 125 million of a *catarrhalis* vaccine.

This case illustrates the feeble toxicity the pneumococcus may assume. Apparently it was doing little in the respiratory tract, but was probably the cause of his malaise, recurrent jaundice, and bilious attacks. I have little doubt (though the evidence is by no means conclusive) that the pneumococcus was the chief offender, because it was a matter of common remark how his colour, energy, and elasticity of spirits returned after the second inoculation with the pneumococcus vaccine. It will, however, require at least a year's careful observation in this case to settle definitely the etiology. Meanwhile it is worth recording this history in the present series of cases of pneumococcic infection.

CASE XI.

Mr. C., aged 50, was sent to Harrogate in the spring of 1908 for intractable gout, to be under the care of Dr. Wesley Smith, who, however, from the history suspected an infective process, and advised a bacteriological investigation.

"May 13th, 1908.—Twelve months ago Mr. C. had pneumonia, and got better, but a chronic cough remained; the lung has cleared up except a small patch at the left base. Before the pneumonia he had a cough with pus, I believe, but was always able to work. Just over a month ago (April 1st, 1908) the left leg began to swell, which looked like an acute attack of gout, but there was very little redness in the ankle; fluid in the left knee-joint; no temperature. He is anaemic. There is a slight systolic tricuspid murmur. He feels well in his body, gets up every day, and goes out in a chair."

May 17th. His sputum was sent to the Clinical Research Association. A pneumococcus was isolated and subsequently sent to me.

I saw him myself on May 19th. He was lying in bed pale and anxious, breathing quickly, with a rapid pulse. The heart was irritable, with a definite basal murmur. There was an area of slight dullness with vocal resonance over the right middle lobe behind, and definite dullness over the left base. The expectoration was abundant and purulent.

His left leg was oedematous and painful, particularly in the ankle; there was fluid in his left knee. I came to the conclusion that he was in all probability suffering from a prolonged pneumococcic infection widespread in character. His temperature in the afternoon was over 100°. The opsonic indices of specimens of his blood proved instructive.

The blood index for May 19th was 0.71 against the pneumococcus; on May 21st, 0.88; and on May 23rd, 1.0. On this date he was said to be improving; the oedema fluid from the leg gave an index against the pneumococcus of only 0.09.

The use of Bier's passive congestion method by placing a rubber bandage lightly round the upper part of the thigh for twenty minutes daily was advised, and a course of inoculations with a pneumococcus vaccine as soon as it could be prepared. The Bier's treatment was begun at once, and within two days the leg began to go down, the general condition to improve, and the sputum to decrease.

The first inoculations of 30 million pneumococci were given on June 1st and on June 7th. On June 8th, sputum still less, sweating had stopped, but the anaemia was still severe.

On June 17th a third inoculation was given. Dr. Wesley Smith reported: "Mr. C. is a little better. The left leg, which was so swollen, has gone down, and the right leg is now going down. I am keeping him in bed. For a week the sputum has changed in character—instead of being yellow, it is now merely grey mucus, and only one lump every other day. His lung is much better."

The inoculations were continued at intervals of seven days. On July 7th Dr. Wesley Smith writes: "The mucus now contains no pus; the temperature rises to 100° at night, and is 97° in the morning, but sometimes is normal in the morning. The legs are as swollen as much as before."

The inoculations, etc., were continued as before, but with an increased dose of 250 million. On July 28th Dr. Wesley Smith writes: "Mr. C. is getting better. I am sure the vaccine has set him up and done him a great deal of good. The anaemia is getting better. He is gaining flesh, sleeps well all night. The fluid in the knee is gone, and the oedema in the ankles and legs is much better, but the latter are still swollen. The systolic murmur at the base is gone." The larger amount of vaccine was still continued.

On September 12th the doctor reports: "Mr. C. has greatly improved. The sputum is now like grey mucus, and only comes in small quantities. The temperature rises to 99° every night, instead of 100°. He is no longer anaemic. There is only the faintest trace of endocardial murmur. He has got fat. His legs are still swollen. I have just begun the Bier's treatment again. I left it off until now, because he said it upset him, but it does not do so now."

Mr. C. slowly recovered, and returned home early in December.

The points of interest in this case are that he recovered in six months, although he had been infected for a year previously; that, although his joints were probably infected with the pneumococcus, there was no suppuration; that he began to improve generally directly the Bier's treatment was begun, suggesting that this method actually produced auto-inoculation; that his immunizing power gradually returned, wiping out the general infection; and that this was slow, owing to the feeble anaemic state he had got into from the prolonged toxaemia.

Latham[9 10] in the discussion on pneumonia at the Medical Society of London, March, 1908, stated that he believed that in the near future a great advance might be made by the adoption of vaccine treatment. The lung tissue had some peculiar power of resistance to the pneumococcus, for an abscess of the lung, as the result of pneumonia, was very rare, whilst in other situations the pneumococcus frequently led to abscess formation. This fact encouraged the belief that vaccine treatment might be of great service. The results of vaccine treatment obtained by Boellke, in a few cases of severe pneumonia, and one case of pneumococcic endocarditis were most encouraging. The results of vaccine treatment in case of delayed resolution of the lung, and in pneumococcic infection of other portions of the body were also most encouraging. In 2 cases of pneumonia he (Latham) had recently administered dead pneumococci by the mouth, and in both cases this was followed by a marked fall in the temperature which was progressive, in one case on the third day, and in the other on the second day.

Floyd and Worthington [11] record the following cases of pneumococcic empyema treated with a pneumococcic vaccine:

A girl of 2 years entered the Children's Hospital, Boston.
February 19th, 1907. For eight days previously there had been pain in the right side. On the day before admission the skin broke on the right front of the chest and considerable pus discharged. On the day of entrance a portion of the eighth rib was resected and a few ounces of pus evacuated. The child was thin and weak and in a precarious condition.
February 22nd. Culture from discharge showed pneumococci. Index to the organism was 0.6. A stock vaccine was used and 50 million organisms given.
February 23rd. Index 0.25.
February 24th. Index 1.17.
February 25th. Index 2.25, child brighter, sinuses discharging freely.
February 26th. Inoculated 50 million organisms.
February 27th. Index 0.69.
February 28th. Index 2.14. Discharge lessening. Eating better. Decidedly stronger.
March 1st. Inoculated 50 million organisms.
March 2nd. Index 1.38. Gaining daily. Inoculations were continued regularly, and the child gained rapidly. After about three weeks she went to the country with no discharge from either sinus and in excellent condition.
A boy of 3½ years entered the Children's Hospital on February 15th, 1907. There was a history of pneumonia, with a crisis of five days previous to entrance. This was followed by a second rise of temperature, and a diagnosis of empyema was made. The portion of the eighth rib in the posterior axillary line was resected and about a quart of pus evacuated. A culture showed a pure growth of the pneumococcus present.
February 18th. Opsonic index 1.1.
February 19th. Patient inoculated with 50 million pneumococci.
February 22nd. Index 1.59.
February 23rd. Index 1.5. Inoculated with 50 million organisms.
February 24th. Index 0.45. The child was restless following the last inoculation, and the temperature rose to 105°.
February 28th. Index 1.2. Temperature still elevated, but general condition improving.
March 1st. Index 0.72. Inoculated with 50 million. Discharge slight, and there has been a steady gain in weight and strength.
March 5th. Temperature normal; general condition good.
March 7th. Index 1.2.
March 13th. Index 2.0. Very slight discharge from sinus. Up about the ward. Fairly well. The general gain continued and the sinus closed rapidly. Child sent to the country for a few weeks.
A girl of 3 years entered the Children's Hospital on February 25th, 1907, with signs of infection on right thigh. The following day an incision was made and about 1 oz. of pus evacuated from the femur. A culture from the wound showed the pneumococcus.
February 28th. Index to pneumococcus 0.71.
March 1st. 50 million pneumococci given.
March 4th. 50 million pneumococci given.
March 8th. Index 1.1. Condition of wound much improved; very slight discharge.
March 10th. Incision closing rapidly; no discharge.
March 19th. Wound healed solidly. Child sent home well.

The criticism which presents itself in the two cases of empyema, is that in both cases sufficient time was not given after operation to see the effect produced by the evacuation of the pus and the consequent autoinoculation which invariably takes place under such conditions. In the first case the index was 0.6 two days after inoculation, probably indicating a negative phase. This interpretation is supported by the fact that a fall to 0.25 was registered the next day, intensifying the general low bacteriotropic pressure. That the index rose rapidly is not surprising, but since the first dose produced so marked a negative phase in this case it should certainly have been reduced in the second inoculation. It was not, with the result that a profound drop from 2.25 to 0.69 was produced. In the second case, on the second inoculation of 50 million, a deep negative phase from 1.4 to 0.45 was produced, involving a rise of temperature, which lasted several days. There is no evidence on paper that this child would not have done perfectly well without special inoculation, and the notes show that there was actually a set-back caused by inoculation of what certainly in this case seemed to be too large a dose. My own experience is that 10 to 20 million of this vaccine is quite sufficient for a child. It is to be regretted that the temperature charts were not given in the reports.

The third case was certainly one for inoculation. These infections of the thigh, so common in young children, and so often associated with the lower epiphysis of the femur, yield quickly to the effects of inoculation if given after the disturbance caused by the operation has passed off.

CONCLUSIONS.

It may be taken as a clinical fact that in pneumonia death usually takes place through failure of the heart. Particularly obvious is this in the cases of virulent pneumonia, where death occurs about the fourth day of the disease. Jürgensen aptly says, "It is the heart, and always the heart, upon which the burden is ultimately thrown. Death results from the insufficiency of the heart."[9] It is easy to understand, therefore, why in virulent pneumonia with early heart failure the vaccine treatment in many cases, though it may produce a fall in the temperature, fails. The toxaemia produced is already too profound for just the arrest of the infecting process to be successful. It would seem logical that scientific treatment demands not only the exhibition of the vaccine at as early a stage as possible, before an overwhelming toxaemia has occurred, but also the introduction of a sufficient quantity of an antitoxin at the same time. I am not aware that any work has been hitherto carried out on these lines—the employment of both vaccine and antitoxin—at the same time.

It is not improbable that, in the case of the pneumococcus, the success of a vaccine is not simply due to the fact that it should be autogenous. A good deal of stress is laid upon this feature; but the fact of a vaccine being autogenous narrows down the issue to (1) the right organism being selected, and (2) the vaccine being prepared, if not unduly subcultured, from an organism of requisite virulence.

Fraenkel's pneumococcus is, however, as far as we know, invariable; it is not like the streptococcus (Gordon), an inclusive term for several varieties. On the other hand, we know from the staphylococcus and *coli* bacillus that these may be so subcultured as to lose their original virulence, and that vaccines so prepared are of little use therapeutically. If, then, a potent and reliable stock pneumococcus vaccine is to be obtained, it should be made from as virulent a strain as possible. There is unhappily no difficulty in the early months of the year in obtaining as much as is wanted. The truth of this argument can only be verified by a great number of observations. My own results, as far as they have gone, certainly tend to support this view.

With regard to the treatment of acute pneumonia by inoculation, the practical conclusions which alone can interest the busy clinician are:

1. That successful inoculation for pneumonia is possible.
2. That inoculation does no harm.
3. That a vaccine from one or a number of virulent strains should be used.
4. That it should be introduced as early as possible.
5. That the estimation of the opsonic index is not necessary.
6. That the observation of the temperature and physical signs is in pneumonia a sufficient guide in gauging the repetition of the dose.

Infections of the lung by the pneumococcus which fail to resolve after an acute pneumonia, as well as pneumococcic infections of other areas, ought certainly to be treated with a pneumococcic vaccine; and these cases appear to afford a reasonable prospect of success.

To place the whole question on a sound scientific basis needs, however, a vast inquiry by many workers. It was thought, however, that the above observations were worth recording, as helping in some small measure to clear the ground, and so indicate the direction of a research which has already lagged behind all too long.

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BEQUESTS of £5,000 to St. Bartholomew's Hospital and of sums of £500 each to the Kensington Dispensary and Children's Hospital and the Home for Confirmed Invalids, Highbury, are contained in the will of the late Mrs. Holborn, of Campden Hill, who died on April 28th.

THE French Surgical Association will hold its twenty-second congress in Paris next October, under the presidency of Dr. G. Richelot, surgeon to the Paris hospitals. The opening meeting will take place on Monday, October 4th. The following questions are proposed for discussion: (1) Surgery of the arteries: (2) care of the patient before and after abdominal operations; (3) surgical intervention in injuries of the spine and spinal cord. An exposition of surgical instruments, illuminating apparatus, and dressings will be held during the congress. The General Secretary of the Congress is Dr. Walther, 68, rue de Bellechasse, Paris (7e).

The Croonian Lectures

ON

RADIO-ACTIVITY AND CARCINOMA:

AN EXPERIMENTAL INQUIRY.

Delivered before the Royal College of Physicians of London in June, 1909.

By W. S. LAZARUS-BARLOW, M.D., F.R.C.P.,

DIRECTOR OF THE CANCER RESEARCH LABORATORIES, THE MIDDLESEX HOSPITAL.

LECTURE III.

THE ELECTRICAL PROPERTIES OF RECOGNIZED RADIO-ACTIVE SUBSTANCES; OF NON-MALIGNANT TISSUES; OF CARCINOMATOUS MATERIAL; AND OF CERTAIN SUBSTANCES COMMONLY SUPPOSED TO BEAR A CAUSAL RELATION TO CARCINOMA.

THE researches to which I am now about to refer have been in progress for the past three and a half years nearly continuously. This length of time was necessitated partly by the importance of controlling certain of the results, but mainly by the fact that the differences between the control and the experimental conditions are so small that special care was necessary for their determination. The rate at which the electricity on charged gold leaves leaks from them is dependent upon so many factors that unless the extrinsic causes of leak are reduced to the lowest possible point small intrinsic differences are entirely lost sight of. Electroscopes in which the natural leak is greater than about 1 mm. per hour are quite useless for the purpose; in the majority of the cases the charged leaves approximated over a fixed distance at a rate of about 0.6 mm. per hour, and in a large number the rate was about 0.2 mm. per hour. It follows that the length of time necessary to obtain a single observation, whether control or experimental, is considerable; in no instance has it been possible to obtain more than one observation a day, and in certain of the experiments it took two days to obtain each observation. This difficulty was obviated to some extent by using several electroscopes. As a rule two control electroscopes (charged + and − respectively), and eight experimental electroscopes (four charged + and four charged −) were under observation.

It is unnecessary to enter here into a description of the apparatus or of the precautions taken; they are sufficiently described elsewhere.* Similarly, it is unnecessary, in the majority of cases, to refer to the actual experiments. It will suffice to state that the object of the research was to determine whether the leak of a fully earthed lead electroscope differed according as it did or did not contain one of the substances under investigation.

The substances examined were: Liver, kidney, lung, and spleen (four specimens of each) from non-malignant cases; four specimens of hepatic substance from livers the seat of carcinomatous metastasis; four specimens of the inorganic constituents of bones from non-malignant cases; four specimens of the inorganic constituents of bone from cases of carcinoma, in one of which the bone itself was the seat of secondary growth; twelve specimens of carcinoma. Of substances supposed to be causally related to carcinoma, the following have been examined electrically: Three samples of clay pipe, each sample consisting of portions of three distinct pipes from different sources, powdered and mixed; two samples of soot; one sample of impure cholesterin gallstone from a case of columnar cell carcinoma of the gall bladder; one "pure" cholesterin gallstone; "pure" pigment gallstones; four samples of pitch from different localities; three samples of paraffin wax; three samples of betel nut; and one sample each of metallic arsenic, arsenious oxide, and coal.

In addition to the above, experiments have been carried out in connexion with the recognized radio-active substances—uranium, thorium, and pitchblende—in order to throw light, if possible, upon certain unexpected electrical phenomena.

In the case of the carcinomatous material diagnosis was always made microscopically. Four cases were primary (cervix, cervix, tongue, breast), and 8 metastatic. Of the latter, 6 came from the liver, the sites of the primary growth being rectum (3 cases), breast (2 cases), stomach (1 case); the remaining 2 were pulmonary metastases from cases of mammary carcinoma. The substances were introduced into the electroscopes in the dried powdered state to which they had been reduced for skotographic examination.

RESULTS OF EXPERIMENTS.

In the case of carcinoma material which has been extracted with water and subsequently with ether, or has been extracted once and for all with acetone, there is strong evidence that the leak of the electroscope is accelerated, whether the charge on the leaves be + or −. Similarly there is evidence that the inorganic constituents of bone, whether taken from non-malignant or from carcinomatous cases, accelerate electroscopic leak, whether the charge on the leaves be + or −. And, thirdly, clay-pipe, and possibly one sample of soot, acted in an identical manner.

So far, therefore, there is evidence to satisfy the physicist that the substances mentioned above are "radio-active" in the physico-chemical sense of the term. But already difficulties have arisen, for whereas the carcinomatous material produces skotographic effects when it has been extracted with water alone or with ether alone, it fails to do so when it has been extracted with both, or with acetone, while the inorganic constituents of bone and the clay pipe are equally non-skotographic.

The difficulty becomes much greater, however, when it is found that substances exist which, so far from accelerating the discharge of the electroscope or being without appreciable effect, actually retard the leak whether the charge on the leaves be + or −. I make this statement with a full sense of the responsibility I am incurring. I am aware that the physicist does not recognize such retardation or "antiradio-activity" as it may be termed. I am aware that it includes theoretical considerations of great magnitude, that if recognized radio-activity means the breaking up of large atoms into smaller ones antiradio-activity may mean the synthesis of elements with high atomic weight from elements with lower atomic weight. But I have carried out the experiments with the utmost care of which I am capable, and have found evidence of antiradio-activity a sufficient number of times to be convinced of the accuracy of my observations. Moreover, as the following experiments will show, I believe that evidence of antiradio-activity may be obtained by the use of recognized radio-active substances themselves.

If an aluminium disc be kept in close proximity but not in contact with uranium or thorium or pitchblende for forty-eight hours under fully earthed conditions and its influence upon electroscopic leak after such exposure be compared with its influence before exposure, it will be found, I believe, that the rate of leak has become retarded. This retardation persists for many days, and is independent of the sign of the electricity with which the leaves are charged. Full details of the experiments are given elsewhere.† It will suffice to give here a summary of the results obtained in an experiment lasting over four months, and carried out in order to reinvestigate the question, owing to the adverse criticism to which the first set of experiments had been exposed. This second experiment completely confirmed the first.

* *Archives of the Middlesex Hospital*, vol. vii (Fifth Cancer Report), 1906, p. 190. In this article and in articles that have appeared in the Sixth and Eighth Cancer Reports (1907 and 1909) full details are given of the experiments upon which the conclusions referred to in this lecture are ounded.

† See previous footnote.

Experiments showing that an aluminium disc which has been kept in proximity to a recognized radio-active substance has acquired retarding or antiradio-active properties on electroscopic leak. The values are the mean differences between the experimental and the control electroscopes (Cf. "Arch. Middlesex Hosp.," vol. xv, 8th Cancer Rep., 1909, p. 145).

Experiment.	Control Period.	Blank Experiment.	Actual Experiment.	Remarks.
	Mm.	Mm.	Mm.	
I. Electroscope in which was examined the aluminium disc placed in proximity to uranium nitrate	−25	−25	−27	29 observations for retardation to 10 for acceleration.
II. Electroscope in which was examined the aluminium disc placed in proximity to uranium oxide	+86	+85.5	+82	36 observations for retardation to 9 for acceleration.
III. Electroscope in which was examined the aluminium disc placed in proximity to pitchblende	−18	−21.5	−26	44 observations for retardation to 2 for acceleration.
IV. Electroscope in which was examined the aluminium disc placed in proximity to thoria	−31	−34	−38.5	37 observations for retardation to 9 for acceleration.

NOTE.—In the case of thoria the observed acceleration occurred on the first four days of each of the two parts of which the actual experiment consisted and was evidence of the well-known "induced radio-activity" due to thorium.

The following experiment shows that a similar retarding property is conferred upon an aluminium disc that has been placed in proximity to a substance that itself has retarding influence upon electrosoopic leak. This experiment was carried out at the same time and under the same conditions as those mentioned above.

Experiment.	Control Period.	Blank Experiment.	Actual Experiment.	Remarks.
	Mm.	Mm.	Mm.	
V. Electroscope in which was examined the aluminium disc placed in proximity to a cholesterin gall stone	−3	−4	−8	41 observations for retardation to 5 for acceleration.

Returning now to a consideration of carcinomatous material itself, it appears that the electrical properties differ according as the substance has or has not been extracted before its influence upon electroscopic leak is determined. Moreover, the extract exerts a definite influence upon the leak, and that influence is in the opposite direction to that exerted by the extracted substance. This is shown by the following table, condensed from one given by me elsewhere[1]:

Table showing the influence upon electroscopic leak of four specimens of carcinomatous material before and after extraction and of the extracts themselves.

	I.		II.		III.		IV.	
Charge on gold leaves ...	−	+	−	+	−	+	−	+
Carcinoma, dried and powdered	A	A	R?	O	A	O	A	O
Above after extraction with ether	A	A	R	A	A	A	A	A
Above after extraction with ether and subsequent extraction with water	A	A	A	A	A	A	A	A
Ethereal extract of above...	R	R	R	R	R	R	R	R
Watery extract of above after its extraction with ether	R	R	A?	R	A	R	R	R

A is used to signify acceleration; R, retardation.

The manner in which the uncertain influence upon electroscopic leak exerted by the substance when simply dried and powdered gives place to an increasing evidence for an accelerating power after each extraction, the powerfully retarding character of the first extract, and the less powerful but still distinctly retarding character of the second, afford a chain of evidence, not only for the existence of "antiradio-activity," but also for the presence of both forces in carcinoma tissue, that cannot lightly be dismissed. So far as concerns the accelerating influence of carcinoma material after extraction, the conclusion given above is supported by the results of examining electroscopically eight other specimens extracted with acetone.

While carcinoma tissue after extraction accelerates the leak, this is not the case with liver or lung from non-malignant cases. These extracted tissues were found uniformly to retard leak. The acetone extract of non-malignant liver, however, agreed with that from carcinoma tissue in retarding leak, and the unextracted tissue showed a less tendency to induce retardation than the extracted. Below are given the results obtained with four specimens of liver from non-malignant cases.

Table showing the influence upon electroscopic leak of four specimens of liver from non-malignant cases before and after extraction and of the extracts themselves.

	I.		II.		III.		IV.	
Charge on gold leaves ...	−	+	−	+	−	+	−	+
Liver, dried and powdered..	A	R	R?	R	R	R	R	R
Above after extraction with acetone	R	R	R	R	R	R	R	R
Acetone extract	R	R	R	R	R	R	A	A?

A signifies acceleration; R, retardation.

In the first lecture evidence was given to show that the skotographic action of an organ which is the seat of carcinomatous metastasis differs from normal. Examination of four specimens of hepatic tissue from livers the seat of carcinomatous metastasis shows that the new growth also influences the electrical properties. Thus, in the table immediately preceding, the evidence for retardation exerted by the four specimens of acetone-extracted liver (each of which retarded the leak whether the sign on the leaves was − or +) consisted of 76 individual observations of retardation to 4 of acceleration. In the case of hepatic substance from livers the seat of carcinomatous metastasis, not only did two of the specimens show discordant results affording evidence of acceleration in the electroscope charged with one sign and retardation in the electroscope charged with the other, but the total number of individual observations in favour of retardation was only 52, against 28 in favour of acceleration.

Comparison of the results obtained with the inorganic constituents of bones from non-malignant and those from malignant cases affords confirmatory evidence of the influence of carcinoma upon the electrical properties of the tissues, but here the natural influence of the inorganic constituents appears to be accelerative and in carcinoma the tendency is increased. Thus two out of four samples of inorganic constituents of bone from non-malignant cases afforded discordant results, showing acceleration in the electroscope charged with one sign and retardation in the other, while the total number of individual observations in favour of acceleration was 41 (or 59 per cent.), against 29 for retardation, whereas when derived from cases of carcinoma the discordancy was somewhat less, and the total number of individual observations in favour of acceleration was 53 (or 66 per cent.), against 27 for retardation.

Leaving on one side the evidence afforded by electrical examination of kidney and spleen on the ground that the results are not sufficiently clear to allow of deductions being drawn, I pass to the consideration of substances commonly supposed to be causally related to carcinoma.

In this part of the subject the evidence that I have to offer is of different value in different cases. Electrical examination of clay pipe, of paraffin wax, and of cholesterin gall stone has been carried out on so many occasions that I have more confidence in the case of these substances than in that of others of which the electroscopic examinations are clearly too few. Here, I can only beg your

indulgence and plead the motto of our college as an excuse: *Ὁ βίος βραχὺς ἡ δὲ τέχνη μακρή.*

I have already stated that I find evidence that clay pipes exert an accelerating influence upon electroscopic leak whether the gold leaves be charged − or +. In the case of paraffin and cholesterin gall stone the evidence is no less clear, but both substances exert a retarding influence, and again whether the electrical charge on the leaves be − or +. Experiments with different samples of pitch seem to show on the whole that this substance exerts a retarding influence, but there is no reason to suppose that a uniform effect would be produced by all samples of this or of any other substance of an impure or complex nature. The same criticism holds good in the case of soot, one sample of which yielded me evidence of retardation, while the other gave uncertain results. Metallic arsenic, arsenious oxide, and betel nut appeared to be without effect upon electroscopic leak, but too few experiments were made with them to allow me to speak with confidence.

In my experiments with the substances mentioned above—some of the earliest made in the entire research—I sought to show that the accelerating or retarding property was manifested, even though the substance under examination were covered with an aluminium cap. In numerous instances this appeared to be the case, and undoubtedly, if true, it would afford convincing proof of the similarity of the action of the substances with that of recognized radio-active substances. But owing to the fact that I have found an aluminium disc to become electrically modified by the proximity of a recognized radio-active substance or of a pure cholesterin gall stone, my conclusions on this point require reconsideration. It may be added, however, that even if the influence from the substances did not traverse the aluminium, it would not disprove the possibility of their being essentially "radio-active," since conceivably they might only give off alpha particles, or alpha particles and beta radiations of so low penetrating power that they failed to traverse the aluminium screen.

Having described in brief the electrical effects of the various substances that particularly interest us from a medical point of view, it is now necessary to revert to the recognized radio-active substances.

I have already said that I have reason to believe that recognized radio-active substances induce "antiradio-activity" in an aluminium disc with which they have been placed in proximity, though not in contact, for a certain length of time. This change, I believe, is indicated by the acquisition of a retarding power by the disc on electroscopic leak. But there is no doubt that a metallic surface that has been bombarded by radio-active rays manifests physical change of a gross kind. Thus, the anticathode of an *x*-ray tube not infrequently becomes perforated in course of time, an aluminium disc which has been exposed to radium for four months shows actual pits on its surface, while an aluminium disc exposed to the relatively feeble radio-activity of uranium for four months shows a loss of polish of its surface over an area corresponding to that which had been in proximity to the uranium. In the last lecture it will be shown that animal cells, in like manner, afford evidence of altered behaviour as the result of proximity to recognized radio-active substances.

This brings us to a consideration of extreme importance. There is no doubt that the facts and the conclusions of the chemist and physicist cannot be applied to biological problems in a crude manner. It is unnecessary to labour this point. It is supported by the whole of chemical physiology and pathology, from so simple an example as the fact that iron in combination with globulin in the form of haemoglobin fails to give the ordinary chemical tests for inorganic iron to the complicated problems of immunity which have shown repeatedly that the animal body is not a mere test tube in which a simple chemical process is taking place. In a word, for the biologist, a necessary preliminary to consideration of radio-activity as understood by the chemist and physicist is a determination whether the radio-active element when in combination with protein behaves in the same way as it does when in combination with other elements to form an "inorganic" compound. It is in the latter form alone that it has been examined by chemist and physicist.

Even if a series of inorganic compounds of a radio-active element be examined it will be found that the radio-activity as measured by the rate of leak of an electroscope is not identical for all of them. Thus, Colwell and I have shown that the rate of leak of an electroscope in which are examined a number of uranates of the alkalis and alkaline earths as well as the nitrate and sulphates of uranium varies inversely as the atomic weight and the valency of the elements with which the uranium is linked. From this we argued that uranium in combination with the huge protein molecule would show a correspondingly enormous diminution of its influence on electroscopic leak.[2] This proved to be the case. We showed, further, that the radio-activity of the uranium is not lost, but only masked, for the ash of an incinerated albuminous compound of uranium or of such inorganic compounds as the nitrate and sulphates of uranium or ammonium uranate (which are more or less completely disintegrated on incineration with the formation of an ash consisting chiefly or entirely of an oxide of uranium) produces a profound acceleration of leak. Similar results were obtained with the nitrate and sulphate of thorium and a thorium albuminous compound. Full details will be found in the original paper. Below are given examples in illustration of the statements made above:

Mean values of electroscopic leak in the presence of certain uranium and thorium compounds in the natural state and after incineration.

	Mean Rate of Leak per Hour in Mm.	
	Natural State.	Incinerated.
Black uranium oxide	175	177
Ammonium uranate	125	171
Thallium uranate	101	114
Uranyl sulphate	91	177
Uranyl nitrate	80	187
Uranous sulphate	62	159
Uranium Witte-peptone	22 4	126
Uranium serum (pleural fluid) ...	13.5	85
Uranium egg-white	13	95
Uranium spleen-pulp	10.9	53.6
Thorium sulphate	62	124
Thorium nitrate	55	142
Thorium egg-white	7.5	41.4

Natural leak of empty electroscope 3.6 mm. per hour.

Now the uranium and thorium albuminous compounds contained about 10 per cent. of the radio-active element by weight, and it has already been said that their photographic effect is small and may be completely wanting, even though they be allowed to act on the film through a thin layer of air, while at least the thorium compound fails to affect the film through a screen so thin as that formed by brushing egg-white over tissue paper. Evidence of radio-activity in the physical sense is therefore reduced to a very low point, and it is easily conceivable that with smaller percentages of the radio-active element, or in combination with still larger molecules or combinations of molecules, all evidence of "radio-activity" should be lost, although the fact that the substance in question contains the recognized radio-active element would be immediately demonstrable on removing the impeding constituents of the compound by incineration.

Proceeding on these lines I have incinerated animal substances of all kinds, in the hopes of setting free a radio-active substance that would be recognized by physicists and chemists, but without success. Clearly the tissues contain no radio-active substance which can survive exposure to a white heat. Whether they contain a radio-active substance that can withstand a temperature of 300°, after which skotographic action disappears, but is dissipated or disintegrated between 300° C. and the temperature of white heat, it is impossible to say. In any case experiments with albuminous compounds of recognized radio-

active substances, such as uranium and thorium, indicate that small evidence of radio-activity manifested by an animal tissue does not necessarily mean that that tissue contains only a small amount of a radio-active element. The smallness of the evidence may simply depend upon the relative completeness with which the radio-activity is masked by the albuminous molecules with which the radio-active element is in combination.

By comparing the rates of electroscopic leak when the substance is directly exposed to the charged leaves, and when it is separated from them by a screen of thin aluminium foil, it is possible to separate that portion of the leak which is due to the impact of alpha particles from that portion due to beta and gamma rays. As is shown by the following table, the masked radio-activity consists chiefly, if not entirely, of alpha particles. In the case of thorium compounds, the table is of particular importance, inasmuch as it not only shows the great increase of leak due to alpha particles after incineration, but also an enormous disappearance of some radio-active element producing beta and gamma rays during incineration. It is necessary to add that the amount of radio-activity that is removed from thorium compounds by incineration varies considerably under a number of circumstances that need not be mentioned here, but that all the thorium compounds given in the table were prepared from a single sample of thorium, and are comparable amongst themselves, though not with those given in the preceding table.

Portions of the rate of leak per hour occasioned by certain uranium and thorium compounds due to alpha particles and to beta + gamma radiations.

	Natural State.		Incinerated.	
	α Particles.	β + γ Rays.	α Particles.	β + γ Rays.
Black uranium oxide	145.8	29.2	144 0	33 0
Ammonium uranate	101.2	23.8	145.5	25.5
Thallium uranate ...	79.4	21.6	82.6	21.4
Uranyl sulphate ...	57.0	35 0	142.8	37.2
Uranyl nitrate ...	52.4	27.6	151.9	35.1
Uranous sulphate ...	52.8	11.2	127.0	11.0
Uranium egg-white	4.8*	0.6*	124.0	1.8*
Thorium sulphate...	24.1	77.9	78.4	27 6
Thorium nitrate ...	21.7	70.6	127.8	16.2
Thorium hydroxide	104.0	496.0	123.0	22.0
Thorium egg-white	3.1*	1.4*	46.5	7.8*

* In the case of these low values the ascertained leak has been corrected by the natural leak of the electroscope determined specifically for the purpose on each occasion; elsewhere it is neglected.

As to the work done and the changes produced within the molecule by the imprisoned alpha particles, it is only possible, as yet, to speculate. Evidence has been given that carcinoma material, with its tendency to accelerate electroscopic leak, modifies the electrical conditions of the tissue in which it lies; it is not impossible that the bombardment with alpha particles undergone by an aluminium disc in proximity with a recognized radio-active substance may lead to that "antiradio-activity" of the disc which I have described.

LECTURE IV.

INFLUENCE OF RECOGNIZED RADIO-ACTIVITY AND OF CERTAIN SKOTOGRAPHIC NON-MALIGNANT MATERIALS UPON THE DIVISION OF ANIMAL CELLS.

HITHERTO the experiments I have described have been of a chemical or a physical nature; the next step, and the last I am at the present time in a position to make, will be into the animal kingdom. Whatever the results we may have obtained, their sole importance to us as biologists, and even more as medical men, lies in any application they may have to the processes going on in the animal cell. If radio-activity, if the peculiar skotographic and electrical properties we have now found to be associated with a number of substances some of which are derived from the animal body, influence cell nutrition, cell growth, cell multiplication, they are of interest to us; if not, we may leave them on one side.

The cell which I have chosen for this part of the research is the ovum of *Ascaris megalocephala*, an intestinal entozoon of the horse. When removed from the oviduct the ovum shows a thick cell membrane, a single undivided cell, and a general absence of pigment or foodstuffs. Since it is obtainable in enormous numbers, is clearly visible with a half-inch objective, and passes through the changes up to the formation of a complete living and moving embryo worm within a few days or a few weeks, according to the temperature at which development is allowed to proceed, it is very suitable to our purpose.

Examination of the development of the ovum when it has been exposed to the influence of recognized radio-activity, has been carried out in the case of *x* rays, radium, thorium, and uranium.[3] The results agree remarkably, not only in their general direction, but also in the fact that certain special effects are produced by the two most potent members of the group—radium and *x* rays.

The experiments consisted in determining the rates of division of the cells under conditions that differed only in respect of their exposure or non-exposure to radio-activity. In the case of *x* rays, exposure lasted varying times, from two minutes to twenty minutes, and the ova were exposed to the rays at the commencement of the experiment when they were all in the one-cell stage. In the case of radium, thorium, and uranium the ova were exposed to the action of the substance during the whole time of their development. Inasmuch as *x* rays are gamma rays alone, while radium, thorium, and uranium give off alpha particles as well as beta and gamma rays, the experiments differed in this respect. Moreover, since the radium, thorium, and uranium were exposed to the ova without any intervening substance except a thin layer of air, the cells were acted on by all three constituents of radio-activity in the case of these substances.

Below are given the results of an experiment using *x* rays.

Characters of Cell Division in 200 Ova after Exposure to X Rays for Varying Periods.

Immediately after exposure:
All cells in 1-cell stage.

24 hours after exposure (room temperature):

	1-cell stage.	2-cell stage.
Control	158	43
2 min. exposure	140	60
4 ,, ,, ...	151	49
6 ,, ,, ...	164	36
9 ,, ,, ...	175	25
12 ,, ,, ...	184	16
15 ,, ,, ...	187	13
20 ,, ,, ...	194	6

48 hours after exposure (room temperature):

	1-cell stage.	2-cell stage.	3-cell stage.	4-cell stage.
Control	74	65	26	35
2 min. exposure ...	71	52	22	55
4 ,, ,, ...	81	42	21	56
6 ,, ,, ...	90	46	20	44
9 ,, ,, ...	107	53	21	19
12 ,, ,, ...	104	60	15	21
15 ,, ,, ...	128	43	14	15
20 ,, ,, ...	126	57	13	14

This experiment, which has been repeated on many occasions with similar results, shows conclusively that *x* rays have a dual effect. Short exposures accelerate, long exposures retard, cell division.

Since the ovum does not increase in size during development it becomes impossible to conduct the experiment satisfactorily during the period between the four-cell stage and the early embryo, but with the formation of the embryo the accelerating and the retarding influences of the *x* rays again become manifest. Thus the ova, concerning which details have been given above, were transferred to the incubator at 37° C. during the third and fourth days after exposure to *x* rays, and it was then found that the control specimen showed immature embryos and 1 living and moving worm; the two-minute and four-minute specimens were indistinguishable from the control, and also showed 1 living and moving worm apiece.

But in the six-minute specimen there were 3 living worms; in the nine-minute specimen, 6; in the twelve-minute, 1; in the fifteen-minute, 2; and in the twenty-minute specimen there were 21 living and moving worms. Here we have evidence of accelerated development. Evidence of the antagonistic influence of the rays on the same specimens of ova was obtained by keeping them in the incubator for a further period of three days, by which time development has proceeded to its furthest extent within the egg case.

The Final Results.

	Complete Development.	Failure of Development.
Control	193	7
2 minutes' exposure	193	7
4 „ „	169	31
6 „ „	166	34
9 „ „	165	35
12 „ „	174	26
15 „ „	157	43
20 „ „	133	67

Movement and Absence of Movement in Fifty Completely Developed Embryos.

	Living and Moving.	Motionless.
Control	45	5
20 minutes' exposure	30	20

This antagonistic influence of *x* rays upon the development of the ova of *Ascaris megalocephala* has already been described by Perthes,[4] and Bonney and I fully confirm his results, both with regard to the main proposition and with regard to the observation that, though division of the cells may go on for a certain length of time, exposure to *x* rays in large doses leads to the formation of monstrosities and abortive embryos. Perthes, however, failed to recognize an accelerating influence.

Working with the root-tips of plants, Cattley[5] has obtained results similar to those of Bonney and myself, both as regards acceleration and as regards retardation of cell division, but he found no evidences of gross pathological change at any time.

Exposure of ova to radium leads to results practically identical with those following exposure to *x* rays. For the first twenty-four hours of the experiment division occurs more rapidly in the cells exposed to radium than in the control, but from that time forward division in the control comes to the front, and at the conclusion of the experiment the control contains a larger number of living and moving worms than the sample exposed to radium. Nevertheless, as in the *x*-ray experiment, the first fully-developed and living worms are met with, not in the control, but in the irradiated specimen. Finally, the specimen exposed to radium shows ova in all stages of development, in some of which the division appears to have proceeded on normal lines pevious to its arrest, while in many it has been irregular, as shown by abnormality of the number of cells to which division has given rise, and a wide irregularity in size of the daughter cells (Fig. 14).

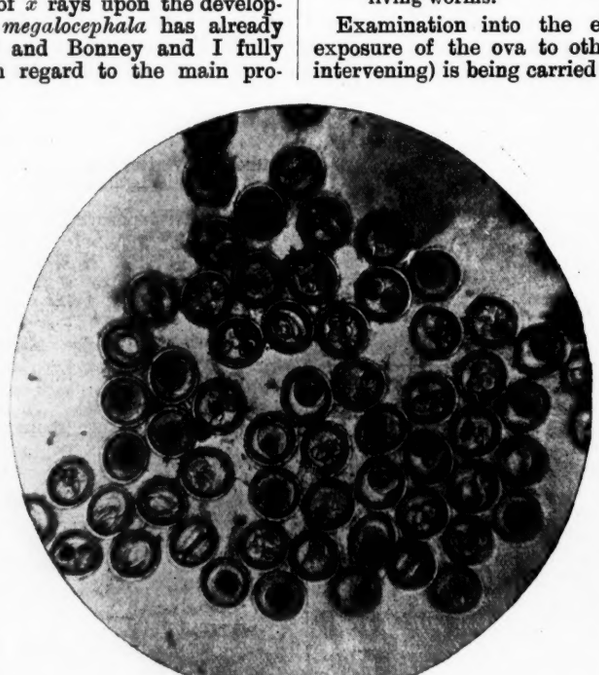

Fig. 14.—The development of the ova of *Ascaris megalocephala* under the influence of radium. Note the great variability in the stages of division, all stages from a single undivided cell to a complete worm being recognizable.

As might be expected, exposure of ova to uranium or thorium leads to less marked results than exposure to *x* rays or radium. In particular, there is no evidence of the production of monstrosities, nor is there any recognizable difference in the number of ova that arrive at the formation of living worms. On the other hand, acceleration of division in the early stages and retardation in the later are shown with clearness. The following experiment illustrates these points.

Experiment showing the Influence of Exposure to Thoria or Uranium Oxide upon Cell Division in the Ova of Ascaris megalocephala.

September 29th, 1908.—All ova in 1-cell stage.

September 30th.—	1-cell stage.	2-cell stage.
Control	157	43
Thoria-exposed	136	64
Uranium-exposed	141	59

October 1st.—	1-cell stage.	2-cell stage.	4-cell stage (and over).
Control	0	17	183
Thoria-exposed ...	4	21	175
Uranium-exposed ...	3	10	187

October 2nd.—
Control. All cells in morula stage.
Thoria-exposed, Uranium-exposed: All cells in morula stage, but the morula appears to be composed of fewer cells than in the control.

October 3rd to 7th.—No perceptible changes in any of the specimens.

October 8th.—	Living Embryos.	Incomplete Embryos.
Control	115	85
Thoria-exposed	42	158
Uranium-exposed	81	119

October 11th.—All specimens consisted of fully developed living worms.

Examination into the effect upon cell division of exposure of the ova to other substances (a layer of air intervening) is being carried out at the present time in my laboratory by Somerville Hastings and myself. In a preliminary communication[6] we record the results of experiments with materials of importance in connexion with the subject now under discussion. Thus we have examined the effect of exposing ova to various extracts of tissues having skotographic power, and find marked evidence that the rate of development is influenced by the character of the extract in proximity with which they are dividing. Thus the proximity of a protein-free watery extract of sheep's liver or of ovary of herring causes the ova to pass from the one-cell stage to the two-cell stage more slowly than in the control—that is, retards development—while a similar extract of the testis of the herring accelerates division. Quite apart from the results to which this remarkable observation may possibly give rise in the future, it is clear that the effects of these extracts, acting on the cell as they do, through the egg case, and producing results similar to those which follow exposure of the ova to the action of *x* rays and radio-active substances in general, suggest that there resides in animal tissues a force unrecognized hitherto, and resembling radio-activity in certain respects.

SUMMARY OF RESULTS.

I have now laid before you the results I have so far obtained in this research. I have not hesitated to occupy

the greater part of the time at my disposal in this way, partly because in cancer research there is at present more need for practical experiment than for theoretical disquisition, and partly because the Croonian Lectures afford a rare opportunity for presenting the results of a prolonged research in an orderly manner. It is right, however, that in the time remaining to me I should summarize my results, and, as far as may be, consider established facts in connexion with carcinoma under the light that they afford.

The original question with which I started—namely, Do the physical agents which are commonly supposed to give rise to cancer (clay pipes, soot, etc.), and do samples of carcinomatous material afford evidence of the possession of radio-active properties?—is not conclusively answered. In certain respects they behave like the radio-active materials of the chemist or physicist, but in no single instance do they respond to all the criteria of recognized radio-activity. Thus, I have shown that many of the substances affect a photographic plate in the dark; but, on the other hand, few can act on the plate if a screen be interposed, and even in those instances in which a positive result is obtained under these circumstances, it is doubtful whether the interposed celloidin screen is fairly so called. Nevertheless, it is doubtful whether the power of acting through a screen is a necessary criterion of radio-activity, since I have shown that albuminous compounds of recognized radio-active substances may possess a power of acting on the photographic plate which will not traverse an extremely thin screen, and, indeed, may be devoid of photographic powers altogether. In the latter respect they are comparable with clay pipe, inasmuch as neither type of substance acts on a photographic plate and both accelerate the discharge of an electroscope. In the same category comes carcinoma material which has been extracted with acetone or with water and subsequently with ether. Possibly, too, some specimens of spleen and of the inorganic constituents of bone are to be reckoned in the same class.

Even a greater difficulty arises in connexion with those substances which I have found to retard electroscopic leak. Such a property is entirely repugnant to present ideas of radio-activity. If I am correct in asserting that evidence of retardation can be obtained by the use of recognized radio-active substances, as in the case of aluminium discs which have been placed in proximity to uranium, thorium, or pitchblende, this difficulty is overcome. It may be that the dual accelerative and retarding influence which I have found all forms of radio-activity to exert upon the development of the ova of *Ascaris megalocephala* will help in determining this important question. Already this line of research is indicating that certain animal extracts having skotographic powers resembling those of radio-active substances up to a certain point are able to influence the rate of development of animal cells when acting on them from a distance, and through the screen of their own egg case. It is not impossible that we shall find that the laws of radio-activity as determined by the physicist require some modification when adopted into biology owing to the presence of the protein molecule, just as the laws of filtration and osmosis have required adjusting to the special circumstances of the case. I showed some years ago that the presence of even a minute trace of protein profoundly modifies the rate of osmosis,[7] and I showed in the last lecture that combination of a radio-active element with a protein molecule profoundly modifies the rate with which it induces electroscopic leak, and its photographic powers.

Table showing Principal Skotographic and Electroscopic Results hitherto Obtained.

Type of properties: The substance acts on a photographic plate directly and *also* through a screen. It *accelerates* electroscopic leak whether the charge on the gold leaves be − or +.

Recognized radio-active substances	Radium, uranium, thorium, uranium albuminate some weeks after its preparation.
Other substances of research	No member found.

Type of properties: The substance acts on a photographic plate directly but *not* through a screen. *Accelerates* electroscopic leak whether the charge on the gold leaves be + or −.

Recognized radio-active substances	Uranium albuminate directly after its preparation, thorium albuminate weeks after its preparation, doubtfully, directly after preparation.
Other substances of research	Carcinoma material after extraction with either water or ether but not both.

Type of properties: The substance acts on a photographic plate directly and *also* through a screen. It *retards* electroscopic leak whether the charge on the gold leaves be + or −.

Recognized radio-active substances	No member of the group found.
Other substances of research	Solid mass of hepatic material.

Type of properties: The substance acts on a photographic plate directly but *not* through a screen. It *retards* electroscopic leak, whether the charge on the gold leaves be + or −.

Recognized radio-active substances	No member of the group found.
Other substances of research	Carcinoma extract, watery or ethereal, non-malignant liver, before and after extraction with acetone, acetone extract of liver, cholesterin gall stone.

Type of properties: The substance has *no* photographic action whatever. It *accelerates* electroscopic leak whether the charge on the leaves be + or −.

Recognized radio-active substances	Thorium (?) and certain specimens of uranium albuminates directly after preparation.
Other substances of research	Carcinoma material after extraction with acetone, clay pipe, possibly some others.

Type of properties: The substance has *no* photographic action whatever. It *retards* electroscopic leak, whether the charge on the leaves be + or −.

Substances prepared by means of recognized radio-active substance	Aluminium discs after proximity to uranium or thorium or pitchblende.
Other substances of research	Aluminium disc after proximity to cholesterin gall stone, paraffin wax, liver substance after extraction with acetone.

The Relation of Radio-activity to Carcinoma.

Leaving now the question whether the substances commonly supposed to be causally related to cancer and certain animal tissues, including carcinomatous material, are radio-active as unanswered—and, in our present state of knowledge, as unanswerable—we may pass to consider recognized facts in connexion with carcinoma as a disease in the light of the experimental evidence I have adduced. It is impossible for me to traverse the whole field, partly from lack of time, partly because I should thereby introduce too much contentious matter. I shall therefore confine myself to a few salient points, offering you something in the nature of an impressionist picture.

One of the most certain features of carcinoma (at all events, as we meet with it in this country) is that it occurs more commonly in women than in men, and that the case-incidence, corrected by the number of persons of the sex living at various ages, in both sexes runs on parallel ascending lines up to the age of about 55 years, while after that age the lines diverge, liability to the disease continuing to increase in males but undergoing a sharp diminution in females. It is certainly remarkable that the degree of skotographic power of the liver in the two sexes and at different age-periods affords a pair of curves agreeing absolutely in these points with the curves of cancer liability (Fig. 15). It is possible that the identity of the two pairs of curves is a coincidence, and that both cancerous and skotographic conditions may depend upon some common underlying cause—for example, senility. Thus, curves made for the incidence of fibrotic kidney and greyness of hair would probably run parallel courses, but no one would infer that the one bears a causal relation to the other. But when one finds that the liability of liver, kidney, lung, and spleen to primary, and in the main to secondary, growth varies directly with their skotographic power, that the liability of gall bladder, urinary bladder, and kidney to carcinoma varies directly with the skotographic value of the calculi by which severally they are affected, that carcinomatous

material possesses this skotographic power, practically without exception, and that the normal skotographic power of a tissue is modified by the presence in it of a carcinomatous mass, the idea that the two are in some way interdependent is strengthened. And when one further finds that these tissues, or their extracts, are capable of influencing the rate of division of animal cells, the suggestion that in them lies the key of a disease which is, after all, nothing more than a disorderly overgrowth of a particular variety of cell, becomes alluring. Nor is the fact that certain of the extracts have been found to possess accelerative, while others possess retarding, powers on development a difficulty, for it is clear that for the occurrence of a carcinoma it is as necessary for the subjacent tissues to undergo a diminution of their normal resisting powers to the encroachment of the epithelial cells as for these latter to undergo an increase in their normal rate of reproduction.

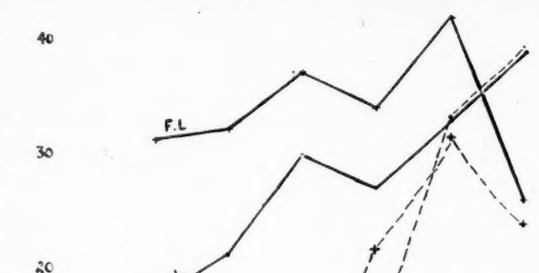

Fig. 15.—FL, Female liver skotographic value; ML, male liver skotographic value; FC, female liability to cancer; MC, male liability to cancer.

This brings us to the question of metastases. I have long felt that the metastases in carcinoma are not regarded in their proper light. Stripped of non-essentials, the occurrence of a metastasis simply means that a cell which is capable of growth is lodged in a situation at which it is not killed. That is to say, the tissues into which a carcinomatous cell is carried by embolism, tissue permeation or other means plays as considerable a part in determining the occurrence or non-occurrence of a metastasis as the transported carcinoma cell. This is shown by the great variations in regard to metastasis met with even in carcinoma of a single site. We cannot believe that a fundamental difference obtains between the cells of one carcinoma of the cervix uteri and those of another, either as regard their "malignancy" or their liability to transport to the lymphatic glands, liver, etc. And yet, as a reference to statistics collected at the Middlesex Hospital will show, more than half of the autopsies on cases dying from carcinoma of the cervix reveal an entire absence of metastasis.[8] The only reasonable explanation of this fact is that carcinoma cells are disseminated through the body in all cases, but in half of them they are destroyed at the seat of their lodgement.

In what the difference between a tissue which allows a transported carcinoma cell to grow and multiply and a tissue which destroys it consists it is impossible to say, but the different properties of tissue extracts upon the division of the ova of *Ascaris megalocephala* are such that in them may perhaps lie the solution of the question.

Nevertheless, the fact that the existence of carcinoma in a body affects the skotographic power of the liver of the patient, even though the liver itself be devoid of metastasis, indicates that an influence is exerted by the carcinoma, or the initial cause of the carcinoma, upon distant parts. And in this connexion one may ask whether it is not possible that those rare cases may be thus explained in which death in carcinoma cannot be attributed with fairness either to the mass of growth, septic absorption, mechanical interference with vital parts, or other similar cause. One of the most noteworthy points in connexion with carcinoma is that a mass will kill, being carcinoma, which would probably not kill if (*caeteris paribus*) it were inflammatory. It is only necessary to compare the certain death from so small a mass of disease as is often a carcinoma of the body of the uterus, with the relatively good prognosis of a far more extensive tuberculosis, actinomycosis, or tertiary syphilitic condition.

If the general liability to carcinoma in males and females be split up into its component parts and the liability to carcinoma at different sites be considered individually, certain interesting points are disclosed. This has been done for 6,421 cases of cancer at the Middlesex Hospital of which details as to age are available. The cases are distributed as follows: Uterus, 2,205 cases; breast, 2,123 cases; alimentary tract from stomach to rectum, 470 female and 586 male cases; tongue and rest of mouth, 783 cases (male); lip, 251 cases (male). The total number of cases of each kind in each quinquennial age-period has been corrected for the number of persons (male or female, as the case may be) surviving at that age-period from 100,000 persons born. The curves thus formed are given in Fig. 16.

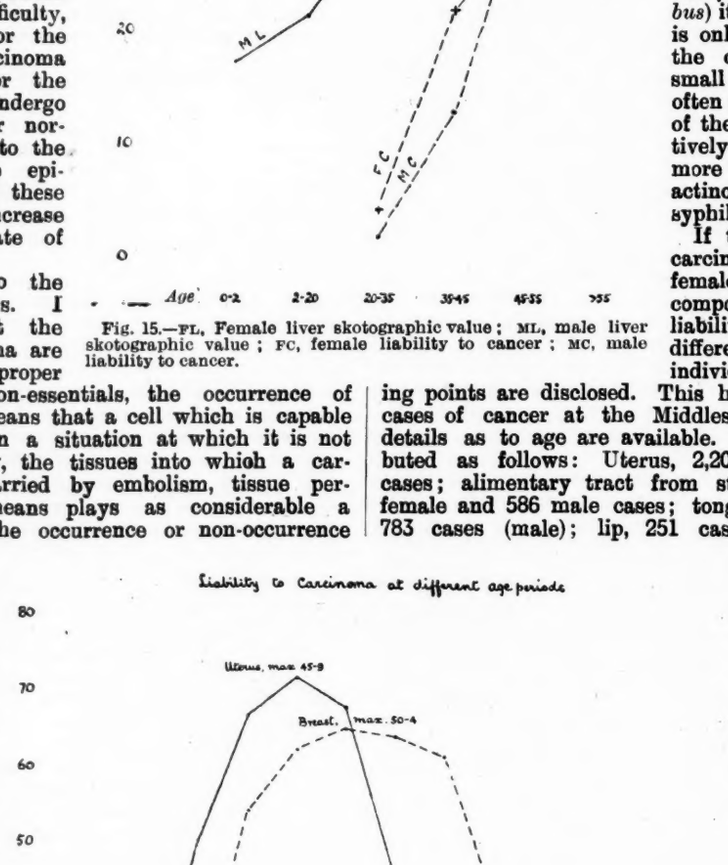

Fig. 16.—Liability to carcinoma at different age periods. (Middlesex Hospital.)

The most striking point in the curves is that whereas all of them show a rising liability with increasing age, this increasing liability only persists to the end of life in the case of cancer of the lip. In every other instance a maximum is reached, after which the liability to cancer diminishes with more or less suddenness. And, further, the maximum liability to cancer of a special organ does not occur at the same age as the maximum liability to cancer of another organ, nor are the ascents and descents of the different curves equally rapid or high in all cases.

There is thus a great contrast between cancer of the lip and cancer of the uterus, for example, so far as the liability of individuals to the two types of disease is concerned. This difference may clearly depend upon either a difference in the incidence of the cause of cancer or

upon a difference in the tissue upon which the cause is acting. So far as a difference in the tissue is concerned, there is no doubt that the maximal liability to cancer of the uterus occurs about the menopause, and that it diminishes with great rapidity immediately after. But the uterine, and particularly the cervical, changes following the menopause are amongst the least marked of climacteric changes, and in any case are minute compared with the uterine modification following a pregnancy. If, however, we consider the question from the point of view of a difference in the incidence of the exciting cause of the disease the matter becomes simpler.

The cervix uteri is particularly suitable for an inquiry into the etiology of carcinoma. It is a limited region, it is in the majority of cases affected by the simplest form of carcinoma, the squamous cell variety, it is placed out of reach of an infinitude of accidents and forces which act upon other parts covered with squamous epithelium, and it is liable to three conditions, two of which, namely, bathing with menstrual blood and bathing with seminal fluid, are peculiar to it, while the third—laceration during childbirth—is merely a trauma more or less resembling traumata in other regions, and, once occasioned, persists throughout life. At the same time, as it is more than usually protected from outside influences, it is one of the commonest, if not actually the commonest seat of carcinoma. Of these three conditions, the two that are peculiar to the cervix are those which attract most attention when considered in relation to the age for the maximum liability to carcinoma of the cervix, partly because traumata occur in other regions, partly because a period of many years usually elapses between the last parturition and the age of maximum liability; and, considering menstrual blood and seminal fluid as possibly containing the essential cause of carcinoma of the cervix, menstrual blood must be put on one side, if only for the reason that if it were the cause one would expect that vagina and vulva and body of the uterus would not show so marked an inferiority in liability to carcinoma as they undoubtedly do. This leaves the seminal fluid; and it is a remarkable fact in this connexion that the spermatozoon is the most potent instigator of cell division known when it acts upon a specific cell, the ovum, and that an extract of the testis of the herring (which consists almost entirely of spermatozoa) favours the division of the cells of the ova of *Ascaris megalocephala* to an extraordinary extent, and at the same time possesses marked skotographic powers (Fig. 17).*

In the case of the breast it appears to me that the observation of MacCormac that various bacteria possess skotographic powers is of great importance in conjunction with the fact that a greater or less degree of chronic mastitis is so commonly met with in mammary carcinoma. From this point of view, mammary carcinoma may be brought into line with carcinomata arising on old cicatrices and long-standing ulcers, whether these be simple or lupoid. It is, indeed, remarkable that the only varieties of bacteria which have been found to possess marked skotographic powers are those which pre-eminently affect man, the pyogenetic staphylococci, *B. tuberculosis*, *B. diphtheriae*, while man amongst the animal kingdom is so much more commonly affected by carcinoma that it may be termed a pre-eminently human disease. When it is remembered that bacteria—especially pyogenetic and tuberculous bacteria—may remain latent for years, when it is remembered that the skotographic action, if not of bacteria, at least of other animal substances, may persist for a period, certainly of months and probably of years, the question arises whether we shall not find the essential cause of carcinoma affecting mamma, cicatrices, old ulcers, directly connected with the bacteria underlying the primary chronic inflammatory condition. If this be so, if the bacteria introduced into the breast, possibly during some lactation period, carry with them by virtue of their skotographic power the cause of a carcinoma which develops years later, we should expect the feebly skotographic bacteria to induce carcinoma later in the individual's life than the far more powerful spermatozoa; we should expect the period of maximal liability to a carcinoma of bacterial origin to be spread over a larger range of years than one of spermatozoal origin, we should expect a later onset of diminution in liability with a carcinoma of bacterial origin than with one of spermatozoal origin, but in both cases we should expect the liability to cancer to diminish in later life. In a word we should expect to find carcinoma of the breast and carcinoma of the cervix showing just those differences of incidence which they actually manifest.

But if, in the case of the uterus, it is difficult to associate the occurrence of carcinoma with peculiarities on the part of the tissue itself, this is even more difficult in the case of carcinoma affecting that part of the alimentary tract lying between stomach and rectum. A glance at the curves of liability to cancer in these regions drawn up for males and for females shows that in males the liability is not only greater but also that it reaches a maximum some ten years earlier than in females, and persists at that maximum for five years longer. We cannot consider that there is so striking a difference between male and female alimentary tissues as this would indicate in the absence of definite evidence on the point. It is easier to imagine that some factor leading to increased division of epithelial cells is more potent in males than in females during the age-period 50 to 69. It would serve no good purpose to discuss here what that factor may be, but it may be pointed out (*a*) that Sir J. J. Thomson has shown that certain foodstuffs—notably wheaten flour—may be radio-active; (*b*) I have shown above that many animal substances have properties which may be radio-active, that both definitely recognized radio-active substances, and extracts of animal tissues are able to accelerate cell division in the ova of *Ascaris;* and (*c*) that, partly as a result of the greater degree to which they are occupied in arduous labour, men consume more food than women.

I have left consideration of the curves obtained for carcinoma of the lip, and of the tongue and other parts of the mouth, to the last because of their great dissimilarity in spite of the similarity of the tissues concerned, and of the identity of most of the conditions to which those tissues are subjected. This dissimilarity of the curves of liability to carcinoma, and particularly the fact that the liability to carcinoma of the lip undergoes no diminution in old age such as is observed in the case of carcinoma in all other sites that we have examined, is strong evidence that some fundamentally different condition obtains in the two situations. The persistency with which the old man clings to his pipe, holding it between his lips, whether actually smoking or not, whether awake or dozing as he sits in the sun or by the fireside, is as characteristic of the ages above 70 as is the toothless condition which commences to set in about 65. On the assumption that the pipe in some way is directly related to carcinoma of the lip, while the teeth are in some way directly related to carcinoma of the tongue and other parts of the mouth, the curves of liability to this disease in the two situations should be exactly as we find them to be.

It may be urged that the observations I have brought forward are nothing more than evidences of that "chronic irritation" which since the time of Virchow has been held to play an important part in the causation of carcinoma. To this my answer must be that the term "chronic irritation" is meaningless, and only indicates that some common factor exists in a variety of conditions that differ otherwise to the greatest extent. Is it not possible that the common factor, which must be capable of stimulating the growth of certain cells while it depresses the growth of others, which must reside in substances of the widest diversity, which must act with varying intensities in different cases though always with comparative slowness, the natural action of which must be progressive so long as it persists, should be radio-activity? The *x* rays cause carcinoma, they stimulate (like other radio-active substances) the growth of cells, and, again, they retard the growth of cells, carcinomatous material, non-carcinomatous material, extracts of animal tissue, various substances usually regarded as causally related to carcinoma, possess properties resembling those of recognized radio-active substances to a greater or less degree when considered from the physicist's point of view, and there is evidence that they possess powers of stimulating or depressing the division of animal cells. Such similarities are at least suggestive.

* The freedom of lower animals from carcinoma cervicis, I suggest, is explained by their entirely different sexual habits. Its occurrence in an undoubted virgin would be explicable on the lines sketched in the next paragraph.

At the same time as radio-activity—using that term to cover the properties of other than *recognized* radio-active substances for the moment—would serve to explain a large number of the salient features of carcinoma as a disease, it would fall in line with other facts that have been made known more recently, and often affords a common ground for views that appear at first sight to be diametrically opposed.

It would fall in line with the observations of Farmer Walker, and Moore on the frequent occurrence of hetero typical and irregular mitoses in malignant new growths, for all observations go to show that the ova of *Ascaris megalocephala* divide with great irregularity when they are exposed to recognized radio-activity, and the same is true when they are exposed to the influence of any of the watery extracts of animal substances that have been mentioned above. It would fall in line with the observations that there is a deficient secretion of pepsin and trypsin in carcinoma, for Colwell and others have shown that the activity of these enzymes is largely diminished when they are exposed to radio-active influence.[9] It would fall in line with the observation that the ereptic power of the tissues in carcinoma cases is not diminished more than in other chronic diseases accompanied by wasting (Colwell[10]), for exposure to radio-activity does not affect the ereptic power of a tissue extract in the slightest degree. It would fall in line with the fact that certain varieties of carcinoma, notably those which are superficial, are curable by radio-activity; for, as is shown by the cases of diphtheria, typhoid, tetanus, anthrax, rabies, and other microbic diseases, the agent producing the disease is prepotent in elaborating the remedy. It would fall in line with the fact that carcinoma is primarily a disease in which a definite variety of cell—the epithelial—is concerned, for there is evidence that radio-activity has selective powers—for example, in its action upon the specific cells of the testicle and upon the spleen. It would fall into line with the remarkable observations of Ehrlich and Apolant, and of Haaland, that in mice transplantation of one type of tumour may lead, as they believe, to the origination of another type from the tissues of the host, for the cells of a carcinomatous mass are endowed with properties resembling those of recognized radio-active substances in many respects.

On the other hand, it would not be opposed to a belief in "cancer houses and localities," for there is no reason why the soils of districts or the materials of which houses are built should not differ in the degree to which they are radio-active, nor why the local radio-activity should not be in certain instances so considerable that cancer arises in successive inhabitants time after time. In a sense the electrical department of every hospital is a "cancer house." It would not be opposed either to an infective or non-infective, a contagious or non-contagious, an animal or vegetable parasitic, a parasitic or non-parasitic, an hereditary or non-hereditary view of cancer, for it would only be concerned with the question whether the inculpated agent is radio-active or not. So far as certain bacteria possessed the properties we are considering, the carcinoma associated with them might be regarded as bacterial and infective, but the bacterial and infective properties would be accidental and non-essential. So far as the agent which leads to hereditary transmission was provided with "radio-active" properties cancer would be hereditary, but the inheritance of cancer would be accidental and non-essential. Similarly it would not be opposed to Cohnheim's theory of embryonic rests, to Virchow's theory of mechanical irritation, to von Hansemann's theory of anaplasia, to Ribbert's theory of tissue tension, to Adami's theory of habit of growth—for it would constitute the underlying force required by each.

There remains the question whether by applying radio-activity we are able to produce carcinoma. To this question I can only reply that numerous experiments have hitherto resulted in failure. I have exposed rats and mice to the action of *x* rays or to uranium or thorium for months; I have kept a glass tube containing radium in the abdominal cavity of a rabbit for months; I have exposed the ears of rabbits to *x* rays for prolonged periods and under different circumstances; but, so far, the only cases of carcinoma resulting from exposure to radio-activity are those which have occurred in the human subject. Yet the experiments I have mentioned have not been without importance, for, as Rowntree[11] has shown, the changes in the rat's tail, and even more those in the rabbit's ear, resemble those in human *x*-ray dermatitis, while there is in certain places a well-marked overgrowth of epithelial cells. In the case of the rabbit's ear, indeed, he finds that the epithelium on the under, or indirectly exposed, surface shows an irregular arrangement of the hypertrophied epithelial cells which appears to be on the border-line between non-malignancy and malignancy. When we can determine that that border-line shall be crossed, one of the greatest steps towards a discovery of the cure for carcinoma will have been made.

References.

[1] *Arch. Middlesex Hosp.*, 1909, Eighth Cancer Report, p. 127. [2] Ibid., vol. xv., 1909, Eighth Cancer Report, p. 156. [3] Lazarus-Barlow and Bonney, ibid., vol. xv, 1909, Eighth Cancer Report, p. 147. [4] *Wiener klin. Wochenschr.*, 1903, pp. 668 and 715. [5] *Journ. Path. and Bact.*, vol. xiii, 1909, p. 380. [6] *Arch. Middlesex Hosp.*, vol. xv, 1909, Eighth Cancer Report, p. 200. [7] *Journ. of Physiol.*, xix, 1895, p. 140. [8] Andriezen and Leitch, *Arch. Middlesex Hosp.*, Fifth Cancer Report, 1906; MacCormac, ibid., Eighth Cancer Report, 1909. [9] *Arch. Middlesex Hosp.*, vol. xiii, Seventh Cancer Report, 1908, p. 94. [10] Ibid., vol. xv, Eighth Cancer Report, 1909, p. 96. [11] Ibid., vol. xiii, p. 182, and vol. xv, p. 192; *Lancet*, March 20th, 1909.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF VOLVULUS.

The article by Mr. Waterhouse on volvulus, in the Journal of May 29th, is most valuable, as pointing out that the site is usually the sigmoid flexure, and so almost always remediable by enemata in the early stage. I believe his advice would have been more useful to the general practitioner, who treats most of these cases, if he had descended to particulars as to how an enema should be given. It may be that the hint I am about to give is found in various textbooks and periodicals, but in thirty years' reading I have never met with it, and only found it out by painful experience. One case, as a sample, will illustrate my meaning. A farmer, aged 63, fell from a load of hay on to the meadow and got concussion of spine followed by partial paralysis of the lower limbs; a catheter had to be passed for two weeks. During the following three years he suffered from constipation, and at the end of this time I was sent for urgently—a distance of eight miles—to see him. I found him with bowel obstruction; the abdomen was tympanitic and as tight as a drum; breathing was shallow, owing to pressure on the diaphragm, but there was no vomiting nor eructations. I gave enemata in the ordinary way, and after nearly an hour I only removed some small scybalae from the lower bowel. It was evident that the obstruction was higher up. I left the patient no better, gave some calomel and opium, and promised to return early in the morning. This I did, taking with me a long tube of soft rubber similar to that used for passing into the stomach. Attaching this to the bone pipe of a Higginson syringe, I gave an enema. The tube when passed through the sphincter is very apt to curl up in the wide or ballooned part of the rectum, and considerable difficulty is often experienced in getting it to enter the upper narrow part, which owing to the curve of the sacrum goes forward at an angle. I pushed the tube as far as it would go, and then, pumping in water under pressure, the bowel dilated in front and I was able to gain an inch or two at a time. Continuing this manœuvre, the whole 32 in. of the tube were at last passed inside the sphincter. I felt the pumping tension relax, heard a gurgling, but continued pumping for a little longer. I now detached the bone pipe from the tube and allowed the water to come away, when the whole gas followed, the abdomen relaxed, and the patient was well.

I have on different occasions had to supplement the tube by a second, and I advise that the tube be 3 ft. or over. I am persuaded this hint of mine may be of service to some sorely perplexed general practitioners.

Castlederg, co. Tyrone. Robert Mowbray, M.D.

Reports of Societies.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

Friday, June 18th, 1909.

Sir PATRICK MANSON, K.C.M.G., in the Chair.

The Future of Tropical Medicine.

PROFESSOR RONALD ROSS, as newly-elected President, delivered an address dealing with the future of tropical medicine. The subject, he said, was a wide one, and required comprehensive and philosophic treatment. He would, in the first place, emphasize the desirability of a careful study of the national history and decadence of the kingdoms and empires of the Old World, and the effects which had been exercised on the prosperity or decay of nations by endemic disease. The work of Mr. W. H. Jones and Drs. Ellett and Withington on the influence of malaria on Greek history was known to them all; and it was only a summary of what had occurred in every part of the world. The physical deterioration which was now so prevalent in large tropical cities he believed was due almost entirely to helminthiasis; and there was no reason why the tropics should not produce healthy and vigorous men in the same way that they produced the strongest and finest specimens of life in the animal kingdom. The scientific history of tropical medicine had also to be carefully studied, and he thought that the publication of monographs on special subjects, and of reprints of classical papers, should receive greater attention. He had long insisted that, in the ordinary medical curriculum, parasitology and perhaps medical entomology should be taught. Diplomas issued by qualifying bodies in Great Britain certified that their holders were qualified to practise anywhere, but that claim could scarcely be justified at present. The future of tropical medicine lay to a great extent in the domain of therapeutics, and fuller research in this direction was urgently demanded. In the tropics, as at home, the housing of the poor was another burning question. It had been shown by one or two of the most advanced nations in Europe that it was possible to have cities without slums, and he was hopeful that the future would banish from their eyes the miserable sights which they now saw everywhere in the tropics. Investigation of possible improvements in the present methods of the disposal of sewage and town refuse was also urgently required; and other measures, such as the provision of wholesome water supplies, the management of wells, and the extinction of vermin in the tropics, were pressing and vital necessities. To achieve these objects sanitary organization must be completely remodelled. The present deplorable condition of things was not surprising; it was only fifty years ago that sanitation on scientific lines had been undertaken at home; and in a sense great improvements had already been made in the tropics. But further advances were most urgently demanded, and it was essential that the sanitary services of practically the whole of our tropical colonies and possessions should be thoroughly organized. At the present moment the health departments resembled the units of an army which had no general; and looking at the question merely from the monetary point of view, judicious expenditure on reorganization would pay. Let them not fall into the mistake that discovery, great or small, finished their duty; research was not a mere academical amusement consisting in the publication of elegant articles adorned with coloured plates. They had not only to teach, but to beseech, demand, and command. They were apt to take too haughty a view of their scientific work, to stand above and apart from the throng of men for whom they were working. It was for them to descend, to go personally into the battle, and fight hand to hand in order to save their fellow men from grave and imminent dangers. Sir PATRICK MANSON said that it was true they had not yet got the general public to believe the truths which had been shown to them. The fault was, perhaps, not altogether on one side, and medical men had, he thought, failed to convince, largely from lack of articulate expression and eloquence. Governments had often been blamed for their deliberation in adopting new and extensive measures of sanitation, but it must not be forgotten that circumspection had been forced on them by the mistakes of sanitary advisers. In India, for instance, millions of public money had been wasted on the supposition that cholera was an airborne disease, and if authorities now believed that the most ambitious schemes did not always mean the most rapid progress, they had abundant precedent to justify them.

ROYAL SOCIETY OF MEDICINE.

SECTION OF DISEASES OF CHILDREN.

Friday, May 28th, 1909.

Mr. R. CLEMENT LUCAS in the Chair.

Tetany and Dilatation of the Colon.

DR. F. LANGMEAD showed a case of facial irritability of fifteen months' duration succeeding tetany in association with dilatation of the large intestine. The patient, a girl, aged 8, was admitted to hospital for tetany in April, 1908. Her facial irritability was pronounced on both sides. No signs of organic nervous disease were found. The colon was dilated. Attacks of laryngismus stridulus occurred. The urine contained indican. The colon was daily washed out, whilst castor oil and salol were given by the mouth. Sauerin, koumiss, and thyroid were also used without effect. The washing out was then discontinued, and energetic treatment with bismuth and opium applied. Enemata and massage were then used for a week with improvement, and after two months she had gained 4 lb. in weight and the tetany and laryngismus had subsided. The massage was continued for three months. The signs of dilatation of the colon then disappeared, but the facial irritability had persisted. A month ago she had another attack of tetany with vomiting. The author also mentioned nine other cases exhibiting relapsing tetany, dilated large intestine, and unhealthy offensive motions, occurring at an age beyond that of the usual infantile tetany. All had died except the patient exhibited. On tapping the cheek of the child an immediate rapid contraction of the muscles on the same side of the face was elicited.

Oxycephaly.

Mr. SYDNEY STEPHENSON showed a case of oxycephaly in a boy aged 32 days, admitted to hospital with ulceration of the right cornea. The right eyeball protruded from between the eyelids immediately after birth. Labour was easy. The eye bulged forth whenever the baby screamed or was bathed. The child weighed 5 lb., had a red and wrinkled skin, loud "snuffles," and a slight papular rash on the hands and arms and trunk. The skull was typical of oxycephaly, the frontal region rising steeply and overhanging the face. The cranium was deficient as regards total size and capacity. All the bones and sutures appeared to be present. The eyeballs, especially the right one, were prominent, though they could still be covered with the eyelids. The orbits were clearly deficient in depth. The CHAIRMAN said that those interested in such cases as this might like to know that at the Royal College of Surgeons all the abnormal skulls had been arranged in series by the new Curator, Dr. Keith.

Congenital Dislocation of the Hip.

Mr. RALPH THOMPSON read a paper upon congenital dislocation of the hip-joint, and showed a number of specimens in illustration of the points arising. He put forward the view that the changes associated with pressure or static dislocation of the hip were too frequently regarded as primary and as producing the dislocation, whereas in many cases of congenital dislocation no deformity was noticed until the child began to walk, and the deformity occurred in well-developed female children, in whom the mechanical conditions were more likely to produce dislocation at the time of the adoption of an erect attitude than was the case in males. The changes found were a shallow and triangular acetabulum, a small flattened head of the femur with a short and anteverted neck, deficiency in the iliac segment of the acetabulum and hour-glass constriction of capsule, a stretched or absent ligamentum teres and some coxa valga and shortening of the leg below the knee. These conditions could all be explained by considering the mechanics of

the joint in children of 2 to 3 years of age. Mr. HUGH LETT said the theory brought forward was very interesting and important. All who had seen cases of congenital dislocation of the hip must have been struck with the remarkable fact that those children did not appear to have anything wrong until they were 3 or 4 years of age. No accident or anything of the kind had been noticed; simply that the child had perhaps limped ever since she could walk. He would like to consider the paper more carefully before speaking very decidedly about it; but there was very much, from an anatomical point of view, in what had been brought out, particularly in connexion with the fetal pelvis, and the relations of various lines of force in male and female. He believed Mr. Thompson's view would very likely be accepted by very many authorities; and, even if they did not accept it, they were bound to weigh it with very great care before putting it on one side. The CHAIRMAN said he had been accustomed to point out that when a child was not allowed to walk on one of its limbs from any cause, it was not only the thigh which was shortened, but measurements showed that the foot and all the bones of the limb were shortened as a result of the lack of use. He understood from the argument that, as the female was less protected than the male from dislocation of the hip, it was unwise to place the female child on her feet so early as the male child.

Medical Inspection of School Children.

In the course of the evening the following resolution, passed by a committee which was appointed some time ago to consider the matter, was discussed and adopted:

> It is desirable that the Board of Education should issue forthwith a complete set of forms for use in the medical inspection of elementary school children, in accordance with Circular No. 582 issued by the Board on January 23rd, 1908, and should issue definite instructions to medical officers as to the manner in which the medical inspection shall be carried out.

Reviews.

THE URANIAN.

The Urning and the Carpenter
  Were sitting hand in hand;
They wept because Homogeny
  Is generally banned;
"If prejudice were swept away,"
  They said, "it would be grand!"

"If to abnormal practices
  We publicly adhere,
Do you suppose," the Urning sighed,
  "The Law might interfere?"
"I dread it," cried the Carpenter,
  And shed a sterile tear.

MR. EDWARD CARPENTER is responsible for a slim gilt-edged volume, published at 3s. 6d. net, with all rights reserved, entitled *The Intermediate Sex;* a Study of Some Transitional Types of Men and Women.[1] It is a collection of five articles of his own, plus an appendix, "which the author hopes will prove helpful, though he does not necessarily endorse all the opinions presented." These articles reiterate *ad nauseam* praise and laudation for creatures and customs which are generally regarded as odious. We have been subjected to so many publications of this character since *Psychopathica Sexualis*, *Sexual Inversion*, and kindred works fell into the hands of curious people, that we recognize the form at a glance.

We look for a prefatory apology for each volume by way of explaining that this particular work, at any rate, is published solely in the interests of science. Mr. Carpenter does not disappoint us in this respect; we find on page 9:

> The literature of the question . . . has already grown to be very extensive, especially on the Continent, and includes a great quantity of scientific works, medical treatises, literary essays, romances, historical novels, poetry, etc. And it is now generally admitted that some knowledge and enlightened understanding of the subject is greatly needed for the use of certain classes, as, for instance, medical men, teachers, parents, magistrates, judges, and the like.

Whilst admitting the unpopularity of the five classes of people Mr. Carpenter has selected as students of his creed and work, we have sufficient pity for them to attempt to mitigate their punishment by extracting from this book some passages which may suffice to guide each pupil, whether medical man or magistrate, parent or teacher, to an enlighted understanding of the Urnings and Uranianism.

First, then, the derivation of this word "Urning"? Thirty years ago, to be precise, an Austrian writer drew attention to this class of people, amongst whom "the (apparently) masculine person instead of forming a love-union with a female tended to contract romantic friendships with one of his own sex." So Dr. Ulrichs called the creatures "Urnings" and the custom "Uranianism." This term of endearment amongst foreigners, "Urning," is, we are told, derived quaintly enough from the word *Uranus*; the explanation given is that *Uranos* signifies heaven, the idea being that, according to those who know, "the Uranian love is of a higher order than the ordinary attachment." To avoid any confusion we may here remind our readers that the word "urinal" comes from a different root.

On page 158 of the Appendix we find classification of these eccentrics. (1) *Mannlings*, who tend to love softer and younger specimens of their own sex. (2) *Weiblings*, who love rougher and older men. (3) *Zwischen Urnings*, who love young men, the *Urano-dioning* who is born with a capacity for loving both women and men, and the *Uraniaster*, a normal man who has contracted the urning habit.

Krafft-Ebing is cited as insisting upon—

> the generally strong sexual equipment of this class of persons, but he hastens to say that their emotional love is also enthusiastic and exalted, and that while bodily congress is desired the special act with which they are vulgarly credited is in most cases repugnant to them.
>
> The Urning loves, deifies his male beloved one. For him he is capable of the greatest sacrifice, experiences the torments of unhappy, often unrequited, love, of faithlessness on his beloved's part, of jealousy, and so forth. His attention is enchained only by the male form. . . . The sight of feminine charms is indifferent to him if not repugnant.

Now we have put before "medical men, teachers, parents, magistrates, judges, and the like," the description Mr. Carpenter gives of these Urnings whose cause he so warmly champions. Most of our readers will prefer to leave them at this point, but since Mr. Carpenter appeals to magistrates and judges, we will cite a few more of his arguments for the defence of those who "form beneath the surface of Society a large class"; for "they suffer severely from the way they are regarded, and in *the manifesto of a considerable community of such people in Germany*, occur the words, 'we are responsive and deeply grateful for the least movement, for every single voice that speaks in our favour in the forum of mankind.'"

We can see Mr. Carpenter holding a pocket-handkerchief before his streaming eyes as he urges us to pity the sorrows of a poor Urning:

> To many of them it is a painful thing that in consequence of their peculiar temperament they are, though fond of children, not in the position to found a family.

This appeal *ad misericordiam* may suggest to our magisterial students the plea of the parricide that the court should "pity a poor orphan!" Mr. Carpenter, however, sees a prospect of growing popularity for Urnings from a strictly economic point of view.

> Popular opinion has probably been largely influenced by the arbitrary notion that the function of love is limited to child-breeding; and that any love not concerned in the propagation of the race must necessarily be of dubious character. And in enforcing this view no doubt the Hebraic and Christian tradition has exercised a powerful influence, dating from far-back times, when the multiplication of the tribe was one of the first duties of its members and one of the first necessities of corporate life. But nowadays, when the need has swung round all the other way, it is not unreasonable to suppose that a similar revolution will take place in people's views of the place and purpose of non-childbearing love.

Those will surely be great days, according to a Swiss writer who is quoted:

> Happy indeed is that man who has won a real Urning for his friend; he walks on roses without ever having to fear the thorns.

And then he adds a beautiful touch:

> Can there ever be a more perfect sick-nurse than an Urning?

[1] London: Swan Sonnenschein. Manchester: S. Clarke. 1908. (Cr. 8vo, pp. 176. 3s. 6d.)

Mr. Carpenter proceeds to assert that "in the alienation of the sexes from each other, of which complaint is so often made to-day, it must be admitted that Urnings do much to fill the gap," and he goes on to plead that "the love with which we are specially dealing is a very important factor in society, and that its neglect, or its repression, or its vulgar misapprehension may be matters of considerable danger or damage to the commonweal."

That is a passage calculated to disturb the normal mind. But Mr. Carpenter has many shocks and surprises in store for simple folk, for instance:

> True Democracy rests more firmly than anywhere else on a sentiment which easily passes the bounds of class and caste, and unites in the closest affection the most estranged ranks of society. It is noticeable how often Uranians of good position and breeding are drawn to rougher types, as of manual labourers, and frequently very permanent alliances grow up in this way, which, although not publicly acknowledged, have a decided influence on social institutions, customs, and political tendencies, and which would have a good deal more influence could they be given a little more scope and recognition. There are cases that I have known (although the ordinary commercial world might hardly believe it) of employers who have managed to attach their workmen, or many of them, very personally to themselves, and whose object in running their businesses was at least as much to provide their employees with a living as themselves; while the latter, feeling this, have responded with their best output. It is possible that something like the guilds and fraternities of the Middle Ages might thus be reconstructed, but on a more intimate and personal basis than in those days; and, indeed, there are not wanting signs that such a reconstruction is actually taking place.

Really, all this is very unsettling, especially when we read that:

> Successful love exercises a helpful influence on the Urning. His mental and bodily condition improves, and capacity for work increases.
>
> The passion is, I suppose, so powerful, just because one looks for everything in the loved man—Love, Friendship, Ideal and Sense-satisfaction.

To magistrates and judges we submit the appeal of Mr. Carpenter:

> The present state of the Law, both in Germany and Britain—arising as it does partly out of misapprehensions and partly out of the sheer unwillingness of legislators to discuss the question—is really impracticable and unjustifiable. While the Law rightly seeks to prevent acts of violence or public scandal, it is going beyond its province when it attempts to regulate the private and voluntary relations of adult persons to each other. We have said that the homogenic affection is a valuable social force, and, in cases, an indispensable factor of noble human character—yet the Act of 1885 [The Criminal Law Amendment Act] makes almost any familiarity in such cases the possible basis of a criminal charge. Whatever substantial ground the law may have had for previous statutes on this subject—dealing with a specific act—it is surely mistaken in passing so wide-sweeping a condemnation on all relations between male persons (though inconsistently enough making no mention of females). It has undertaken a censorship over private morals (entirely apart from social results) which is beyond its province, and which—even if it were its province—it could not possibly fulfil. It has opened wider than ever before the door to a real, most serious, social evil and crime—that of blackmailing; and it has thrown a shadow over the simplest and most natural expressions of an attachment which may, as we have seen, be of the greatest value in national life.

Mr. Carpenter, however, does not deny "that the homosexual feeling may lead to public abuses of liberty and decency; that it is often improperly indulged; and that much teaching and instruction on the subject is needed."

Mr. Carpenter and his set may, if they please, cherish their grievance against the attitude of the law as to the practices they so warmly advocate; and we would remind them that since England and Germany agree in their condemnation of the cult of Uranus, there are other countries where their society might be welcomed. For instance, how about Tahiti as a health resort? We read:

> In the annals of this island are examples of extravagant friendships unsurpassed by the story of Damon and Pythias—in truth much more wonderful—for notwithstanding the devotion to which they led they were frequently entertained at first sight for some stranger from another island.

Surely, however, it would be better for the Urnings to inhabit—we were about to write colonize, but we remember that the chief sadness of their lives is the emphatically non-childbearing essential of their love—some land where their presence might be welcome, and thus serious people in England might be spared the waste of time consumed in reading a low-priced book of no scientific or literary merit advocating the culture of unnatural and criminal practices, which, while having a pernicious tendency, remains chiefly but not wholly ridiculous. An authority frequently quoted in this book when discussing the criminal side of Uranianism complains' 'that if familiarities between those of the same sex are made illegal, as immoral, self-abuse ought much more to be so made!"

But we must decline further quotation. The author has definitely unbuttoned himself to any one who likes to pay 3s. 6d. for this book.

HEART DISEASE.

THE small volume, *Graphic Methods in Heart Disease*,[2] by Dr. JOHN HAY, with an introduction by Dr. JAMES MACKENZIE, printed in clear type, plentifully and well illustrated, has much to recommend it. It contains little or no new matter, but gives a concise account of polygraph work, and is intended to serve as an introduction and guide to those who wish to acquaint themselves with the graphic method. Non-controversial in his style, the writer places before his readers certain facts, with brief interpretations, which are in the main consistent with the views of other workers in the same field in this country. Having outlined the cardiac functions, as now commonly conceived, he gives a summary of Keith's anatomical researches, a detailed description of the new instruments employed clinically and the method of using them, and offers many useful hints to the uninitiated. Normal curves from the jugular veins, apex beat, and other pulsating areas are carefully described. The commoner forms of abnormal cardiac action are exemplified and explained; separate chapters are devoted to "extra-systole" and the "ventricular or nodal form of venous pulse." The eighth chapter acquaints the reader with anomalies of function separately considered. The section allotted to the disturbances of conduction is particularly rich in excellent tracings. The book, ending with a graphic history of a case of mitral stenosis, should fulfil its function—providing a path to the essential facts, and serving as an easy introduction to a subject still in its infancy.

DR. SCHOTT[3] expresses the opinion that the number of heart cases in which direct damage is being done by over-indulgence in athletic exercise is yearly on the increase, and he names cycling as the sport which produces the largest number of such cases. A careful comparison of the effects produced in a healthy individual of 58 years of age, by cycling and walking respectively, showed a marked difference between them in respect of heart dilatation as tested by percussion and x ray examination. Two points of considerable interest arise out of the perusal of the work before us: First, it confirms the necessity, lately insisted upon by medical officers of schools, for medical examination of all competitors in sports involving great exertion, since latent heart weakness may be wholly unsuspected by the subject of it; and, secondly, it shows that dilatation of the ventricle as seen upon the *post-mortem* table is not an accurate measure of the degree to which the ventricle may have been distended during life. The demonstrable dilatation of the heart of the healthy athlete may often be only temporary, but the corresponding stress upon the weakened heart wall of a less vigorous subject may, and probably often does, lead to a permanent weakening which may have its effect throughout life.

ELECTRICAL INJURIES.

DR. SCHUMACHER, of the University clinic of Zurich, has published a small volume on the subject of accidents brought about through the agency of the electrical current.[4] The work is mainly a clinical study, but it also deals with this important question from the standpoint of medical jurisprudence. It forms an index to the scattered

[2] Oxford Medical Publications. *Graphic Methods in Heart Disease*. By John Hay, M.D., M.R.C.P. London: H. Frowde, and Hodder and Stoughton, Oxford University Press. 1909. (Post 8vo, 194 pp., 128 figures. 7s. 6d.)

[3] *Acute Ueberanstrengung des Herzens und Deren Behandlung*. By Dr. Schott of Nauheim. Fourth edition. Wiesbaden: J. F. Bergmann. 1908. (Sup. roy. 8vo, pp. 59, Taf. III, illustrated. 2s. 3d.)

[4] *Unfälle durch elektrische Starkströme. Eine klinische und gerichtlich-medizinische Studie*. Von Dr. E. D. Schumacher. Wiesbaden: J. F. Bergmann. 1908. (Sup. roy. 8vo, pp. 82. 2s. 3d.)

literature on the subject in Germany, France, England and Italy; data are gathered from accident assurance companies on the one hand and medical colleges on the other, and a large number of cases are particularized to enforce the points which the author brings forward. The manner in which electrical currents cause death has given rise to contradictory opinions. The author divides the authorities into three groups, quoting d'Arsonval and Kratter as affirming that death is due to paralysis of the respiratory centres; Tatum, Oliver, and Bolam and others, that it is brought about by stoppage of the heart's action; and Prevost and Battelli, that either explanation may hold good under different sets of circumstances. For his own part he inclines to the belief, which is shared by most British authorities, that death following upon brief contact with, for example, the poles of an alternating current circuit at high pressure is due primarily to heart paralysis. In this work the effects of lightning discharges are not taken into account, the author confining himself to accidents brought about by artificially-generated electricity. Particulars are given of 100 cases of persons killed and injured by electrical currents as a consequence of 98 separate mischances within three years. In the considerable majority of these cases the strength of current involved was more than 1,000 volts, but an appreciable number of accidents, with a fair proportion of deaths, were due to smaller currents ranging from 110 to 250 volts. In 57 cases of supposed death the usual methods of resuscitation were applied, but were successful in 8 only. In dealing with the forensic-medical side of the question, the author illustrates the demands which are made upon the expert knowledge of the "Gerichtsarzt"—that is, the public medico-legal officer. Very often the cause of death is doubtful; moreover, the possibility of suicide must be kept in mind. One fatality is instanced which, instead of being caused by the electrical current as was originally supposed, was found to be due to rupture of the spleen. Even when it is clearly established that electrocution has taken place, the "balance of criminality," if any, has yet to be decided. Negligence or ignorance on the part of the victim is responsible for the largest number of electrical accidents, but it is pointed out that among contributing causes must often be set down makeshift apparatus, insufficient illumination, misleading directions from those in authority, and the absence of protective precautions. Alcohol is cited as answerable for many injuries; not senseless drunkenness, but the bravado stage of intoxication. Those who have to deal with the industrial applications of electricity will find valuable information in what the author has to say about contact risks, the conditions that induce accidents, and the assistance that may be rendered when such accidents occur.

THE DICTIONARY OF NATIONAL BIOGRAPHY.

SINCE we last referred to the reprint of the *Dictionary of National Biography*,[5] three volumes, XIV, XV, and XVI, have appeared, containing the articles which filled Volumes XL to XLVIII of the original edition. As has already been stated, the text remains unaltered, save for the correction of certain errors and the revision of some of the biographies. In its new form the *Dictionary* occupies about a third of the shelf space, is as clearly printed, and is at least as convenient to consult as in its earlier form. The three volumes under notice carry the names from Myllar (Androw), a burgess of Edinburgh, and the first Scottish printer, who flourished 1503–1508, to Robins (Sanderson), an English divine, who in 1851 published a letter to Lord John Russell on the necessity for State education of the people. Volume XIV contains the biographies of Nelson, by Professor Sir J. K. Laughton, of the Napiers, and of many distinguished Irishmen among the O's. In Volume XV will be found the account of the remarkable career of William Petty, who after teaching anatomy in Oxford, and acting as physician-general to the army in Ireland, surveyed the settled lands in that island, became a politician and an authority on economics, and founded the family of which the Marquis of Lansdowne is now the head. Volume XVI contains the biography of the famous Radcliffe, physician, for a time, to Queen Anne, and the founder of the library which bears his name at Oxford. Each volume is furnished with an alphabetical index of names, and the *Dictionary* is not only a model of what a work of reference should be, but an exceedingly enticing book to that respectable person, the desultory reader.

[5] *Dictionary of National Biography*. Edited by S. Lee. Volumes XIV, Myllar—Owen; XV, Owens—Pockrich; and XVI, Pocock—Robins. London: Smith, Elder, and Co. 1909. (Roy. 8vo, Vol. XIV, pp. 1373; Vol. XV, pp. 1352; and Vol. XVI, pp. 1340. 15s. per volume.)

NOTES ON BOOKS.

A LARGE volume[6] which has reached our hands gives a full account of the proceedings of the Society of Medicine and Surgery of Bordeaux during the year 1908. Its contents cover a very wide field. The society appears to meet weekly, and the number of papers recorded is upwards of one hundred. Many of the papers are followed by discussions, but, thanks to the brevity typical of French scientific communications, none of them are fatiguing to read.

The appearance of the *Bibliographica Gymnastica Medica*, by Dr. EDGAR F. CYRIAX,[7] proves, if proof were wanting, that massage and movement now claim a large share of medical attention. To increase its usefulness, the preface and contents page are printed in three languages. It should be useful to all those who wish to refer to previous works on the various branches of gymnastics, massage, and movement cures.

[6] *Bulletins et mémoires de la Société de Médecine et de Chirurgie de Bordeaux*. Année 1908. Paris: Masson et Cie. Bordeaux: Feret et Fils. 1909. (Roy. 8vo, pp. 562.)

[7] *Bibliographica Gymnastica Medica*. By Dr. Edgar F. Cyriax, London. Worishofen: Buchdruckerie. 1909. (Royal 8vo, xxiii and 162 pages, containing about 4,000 references to works by about 2,500 authors. 4s.)

THE ANNUAL REPORT OF THE MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD.

THE annual report of the Medical Officer to the Local Government Board (Dr. Newsholme) for the year 1907–8, has recently been issued.

FOOD INSPECTION.

Dr. Buchanan, Chief Inspector of Foods, presents a report on the work done by his subdepartment during the two years 1906–7 and 1907–8. As a result of representations made to the Board, his assistant, Dr. MacFadden, has made investigations regarding the contamination by lead and arsenic of tartaric acid, citric acid, and cream of tartar. A large number of imported samples were examined and the amounts of lead and arsenic present determined. In several instances the results were unsatisfactory, and it appeared that much of the tartaric acid which arrived in British markets had not been prepared with the care which its use as a food ingredient demanded. In these circumstances it seemed desirable that limits of impurity should be established in regard to lead and arsenic which, account being taken of the ways in which the substances in question are consumed, appeared unlikely to be injurious, and that these, if possible, should not impose an unduly severe task on manufacturers. The limits recommended as guides for trade guarantees and analytical practice in dealing with tartaric and citric acids and cream of tartar were $\frac{1}{7}$ grain per pound of lead and $\frac{1}{100}$ grain per pound of arsenic as arsenious oxide. These recommendations were published in March, 1907, and from information subsequently obtained Dr. Buchanan states that they have been found of practical utility by the trades concerned. There has been a considerable increase in the number of samples of tartaric and citric acids and cream of tartar taken under the Sale of Food and Drugs Acts, and action in these cases has in a number of instances been based on the recommendations of the report.

Dr. Hamill, another of Dr. Buchanan's assistants, has inquired into the adulteration and misdescription of vinegar; he found, amongst other practices calling for remedy, that the adulteration of vinegar by the addition of sulphuric acid was still being carried on. Amongst other subjects which have been engaging the attention of the food inspectors are the addition of preservatives, the

inspection of imported meat foods, and local administration in regard to the wholesomeness of home prepared foods.

VACCINATION.

Of 935,338 births returned to the Board by the several vaccination officers in England and Wales as registered during the year 1906, the number which, at the time the return was made, had been registered as successfully vaccinated was 686,992 (being 73.4 per cent. of the whole), and the number registered as having died unvaccinated was 88,553 (or 9.5 per cent. of the whole). Of the remaining 159,793 children, 2,203 (or 0.2 per cent. of the whole) had been registered as insusceptible of vaccination, 6 as having contracted small-pox, 14,376 (or 1.5 per cent.) as having their vaccination postponed by medical certificate, and 53,828 (or 5.8 per cent.) as children respecting whom certificates of conscientious objection had been received, leaving 89,380 (or 9.6 per cent.) as "removed," "not to be traced," or otherwise unaccounted for. If from the 935,338 births returned by these officers deduction be first made of the deaths that took place before vaccination, it appears that, of the surviving 846,785 children, there were registered at the time of the return 81.1 per cent. as successfully vaccinated, 0.3 per cent. as either insusceptible of vaccination or as having had small-pox, 1.7 per cent. as under medical certificate of postponement, and 6.4 per cent. as children respecting whom certificates of conscientious objection to vaccination had been obtained, leaving 10.6 per cent. as at that time still unaccounted for as regards vaccination.

Regarding alleged insusceptibility to vaccination, Dr. Leslie Thorne Thorne, director of the animal vaccine establishment at Lamb's Conduit Street, reports that during the existence of this establishment 125,566 consecutive primary vaccinations have been performed there without the occurrence of a single instance of so-called insusceptibility to vaccination having been met with by the officers of the establishment.

Referring to the new Government lymph establishment at Hendon, Dr. Newsholme says:

> This establishment has been made as perfect as possible in all its arrangements, and provision has been made in it for the production of greatly increased amounts of lymph in times of emergency.

BACTERIA OF SEWER AIR.

Dr. Andrewes has continued his researches on this subject. In his previous report he brought forward evidence to show that, under many ordinary conditions, characteristic sewage bacteria are demonstrable in sewer and drain air. He found that streptococci in sewer air corresponded in character with those of sewage rather than with those of fresh air, and that bacilli of the colon group, though almost absent from fresh air, could be demonstrated in drain air with no great difficulty, and exhibited biological characters which corresponded exactly with the various bacilli of this group present in sewage. In his present report he has conducted further experiments on "the conditions favouring dissociation of faecal bacteria from sewage during its passage through closed channels in a way to render micro-organisms of this class airborne in emanations from sewers and drains." After considering the methods of bacteriological technique most appropriate for his work, he has satisfied himself that the bile-salt neutral-red lactose agar medium devised by McConkey is well fitted for the detection in drain air of sewage bacteria belonging to the *B. coli* group. Giving a constant exposure of one hour, the number of red colonies arising on plates of this medium has been taken as an index of the relative abundance of sewage bacteria in the air, though it does not reveal the actual number of such bacteria in unit volume of air. Numerous control exposures in fresh air have proved uniformly negative as regards the presence of these bacteria. Applying this mode of investigation to the local drain air of a large public institution and of private dwelling, Dr. Andrewes has shown that sewage bacteria can readily be demonstrated in almost any situation, but that their presence is of a markedly intermittent character. In trapped local inspection chambers the intermittence is more conspicuous than in manholes over main drains. In the latter situation, given even slight degrees of splashing or gurgling, such bacteria seem never wholly absent from the air; but in a local inspection chamber they may be absent for hours at a time. He considers that in the drainage system of a house or institution in ordinary occupation the determining cause of the presence of sewage bacteria in the drain air is droplet contamination due to splashing, though under other conditions of sewage flow the bursting of bubbles or alternate moistening and drying of the walls may also play a part in the sewage contamination of the air. In droplet contamination the droplets are of extremely minute size, probably less than $\frac{1}{50000}$ c.cm. Even in the absence of demonstrable air currents, the influence of droplet contamination extends, in lessening degree, for at least 14 ft. in a horizontal direction, and for at least 12 ft. in a vertical direction, from a focus of slight splashing or gurgling. But the effect of any single act of splashing is very transitory, lasting only for a few minutes. The number of sewage bacteria in the air of drains is influenced by the volume of the sewage flow, which determines the degree of splashing. But as regards the content of drain air in faecal bacteria, the more important factor would appear to be the faecal content of the sewage, and the relative number of lactose fermenting coliform bacilli in the drain air bears a direct relation to the abundance of faecal material in the sewage. Dr. Andrewes points out that his experiments do not justify any conclusion on the important question of the degree to which air currents may convey bacteria dissociated from sewage. This is the problem which underlies the whole question of drain and sewer ventilation and the dangers of the escape of drain air into inhabited houses. He further remarks that there is no evidence that the bacteria which he has so far found in drain air are in themselves harmful. Their importance consists in their being an index of sewage contamination.

ACTION OF LEUCOCYTES ON PYOGENIC COCCI.

Drs. Andrewes and Horder have studied in the rabbit the behaviour of the circulating leucocytes towards pyogenic cocci. In experiments in which known numbers of living pyogenic cocci were introduced, in dangerous dose, directly into the circulation of normal rabbits, they were unable to trace more than a rough correspondence between the size of the dose and the duration of life, owing, apparently, to variations in the individual resistance of the animals. Studying the leucocyte counts of the animals thus infected at short intervals (an hour to fifteen minutes or less), they found the leucocytic response to be highly intermittent. They conclude that the reserves of leucocytes in the bone marrow are, in these circumstances, discharged into the circulation not continuously but in temporary gushes; and they point out that it is easy to overlook a high leucocytic count unless observations are carried out at frequent intervals. Animals which die within one or two days exhibit a failure of leucocytosis before death, but animals which survive longer may show a relatively high leucocytosis up to the time of death, owing, the authors think, to the development of a leucoblastic reaction on the part of the bone marrow. The circulatory leucocytosis is essentially due to increase in the polynuclear neutrophile leucocytes.

When pyococcal vaccines were administered subcutaneously in rabbits, the authors were unable to detect any consequent leucocytosis except in cases where the animals had been previously immunized against some form of pyogenic coccus; but when the vaccines were administered intravenously a pronounced leucocytosis at once ensued. If, in such intravenously vaccinated animals, leucocyte counts are made at short intervals (fifteen to twenty minutes), the leucocytosis is always found to present marked oscillations, suggesting that the bone marrow discharges its reserves in intermittent gushes. This condition is identical with that seen when living pyococci are injected into the circulation. There is experimental evidence that the effect of a single moderate or large dose of pyococcal vaccine intravenously administered is to increase the degree of leucocytic response to subsequent dose, and hence probably to infection with living cocci. The leucocytic response to pyococcal vaccines is essentially due to the polynuclear neutrophile leucocytes. There is nothing to show that the increased

leucocytic response seen after vaccination is in any way specific.

Dr. Andrewes, in a special study of the leucocytes in the rabbit's bone marrow, finds that in normal rabbits submitted to intravenous inoculation with fatal doses of *Staphylococcus aureus*, the number of neutrophile cells in the bone marrow is diminished, though not greatly so, in the animals which die of acute septicaemia within forty-eight hours. If, however, the animal survives for four days or more, there is in all cases a marked neutrophile reaction in the marrow, the number of neutrophile cells per c.mm. being doubled or even quadrupled. This defensive reaction on the part of the bone marrow is also excited by intravenous inoculation with vaccines of killed staphylococci. The known relative immunity which attends such treatment is thus shown to have not merely a humoral (or opsonic) basis, but one which is also anatomical and measurable in terms of the number of neutrophile cells per unit volume of marrow. A correspondence seems to exist between the opsonic value of the serum and the degree of neutrophile reaction in the bone marrow. By too large and too frequently repeated doses of staphylococcus vaccine it is possible to induce an abnormal susceptibility to the coccus in question; this susceptibility is associated with a diminution in the leucoblastic reaction, present in the marrow during the earlier stage of the experiment, no less than with a fall in the staphylopsonic index. In the marrows of animals the resistance of which has been raised by vaccine treatment, but which nevertheless succumb to large doses of virulent cocci, exceedingly high neutrophile counts may be obtained. The bone marrow appears to respond to the presence of *Streptococcus pyogenes* in the same way as to *Staphylococcus aureus*.

Dr. Horder records some preliminary observations upon the prophylactic use of coccus vaccine in rabbits, with particular reference to the amount and frequency of the dose, and the relative advantages of subcutaneous and intravenous inoculation.

Protective Agents in Meningococcus Infections.

Drs. Horder and Gordon have issued a preliminary report on this subject. They have tested the value of three anti-meningococcus serums for prolonging the life of rabbits. First they had to deal with the preliminary difficulty arising from the fact that enormous doses of meningococcus are necessary in order to kill a rabbit. This drawback they were able to overcome by making the discovery that if, instead of employing a large single dose, smaller doses of meningococcus are given at hourly intervals, a much smaller total amount of culture suffices to kill the animal. It was found, moreover, that this seriatim method of dosage brought about the death of the animals with great regularity. Employing this method as the criterion of injury, they found that the three serums in question exhibited neither prophylactic nor curative effects. Normal horse serum had, however, some slight value in prolonging the rabbit's life. The authors then proceeded to study vaccination with the meningococcus as a protective measure, and found that rabbits treated with vaccines prepared in various ways withstood, in most cases, a dose of meningococcus fatal to control animals. Encouraged by these results the authors vaccinated themselves with killed meningococcus, in order to satisfy themselves that the material was not injurious. Having established this point, Dr. Horder applied the vaccine in the same way to certain children suffering from cerebro-spinal meningitis, and obtained most promising results.

Mastitis in Cows.

In continuation of work commenced a year previously, Dr. Savage reports on the bacteria present in 30 cases of mastitis in cows. These 30 cases, together with 6 cases described in last year's report, showed that in 68 per cent. of the total cases streptococci were present, in 16 per cent. staphylococci, in 3 per cent. *B. tuberculosis*, and in 10 per cent. the origin of the mastitis was doubtful, though in the majority of them it was probably attributable to streptococci. In 80 per cent. of the cases of mastitis associated with streptococci the organisms were of a special type, termed by Dr. Savage the "*Streptococcus mastitidis*." In the remaining 20 per cent. other varieties of streptococci were found which in several instances were pathogenic for rodents. It was observed that streptococci identical with those associated with the inflammation in the diseased quarters of the udder were found in milk from quarters clinically unaffected by inflammatory or other changes.

Dr. Savage also investigated the streptococci present in 15 cases of human sore throat, and found two types to be particularly prevalent, the more frequently occurring of the two being the *Streptococcus anginosus* type of Andrewes and Horder. Inquiring into the capacity of streptococci to produce mastitis in goats, he found that severe mastitis was produced in three goats infected experimentally with streptococci from cases of bovine mastitis and from a case of ulcerated teats; but in six goats inoculated with streptococci isolated from human sore throats no mastitis resulted. Comparing the human and the bovine streptococci, Dr. Savage says:

> Morphologically and culturally the two groups are indistinguishable, but they show a wide divergence when their action towards animals is considered. The mastitis type is non-virulent towards mice and other rodents, but possesses in marked degree the power to cause udder inflammation in goats. The anginosus type possesses a considerable virulence towards mice, but is unable to originate mastitis in goats. In other words, an essential difference of functional power separates the types.

Gaertner Bacilli in the Animal Intestine.

Dr. Savage has made extensive cultural investigations of thirty-four strains of known members of the Gaertner group of bacilli. The majority of them proved to be culturally identical when eighteen different chemical tests were employed, although they were obtained from a variety of sources—namely, from meat poisoning cases, from cases of paratyphoid fever, and from special diseases of rats, mice, pigeons, and calves. Dr. Savage attaches special importance to the chemical tests by salicin, dulcite, and saccharose, and doubts if organisms ought to be included amongst the pathogenic members of the Gaertner group when they do not respond to these tests in the same manner as the recognized Gaertner bacilli. The author has also examined the intestinal contents of eighteen healthy and three diseased domestic animals. A number of organisms were found which in many cultural respects closely resembled the meat poisoning bacilli and other organisms of the Gaertner group; but all except one of these could be culturally differentiated by the application of the dulcite, salicin, and saccharose tests. The remaining bacillus was distinguished by its power to ferment glycerine. The organisms resembling the Gaertner group were further differentiated by their failure to agglutinate with the serum of animals immunized by the different types of Gaertner bacilli. Dr. Savage has been unable to find any evidence in support of the view that recognized pathogenic members of the Gaertner group are inhabitants of the normal animal intestine.

MEDICAL AND SURGICAL APPLIANCES.

A Chloride of Ammonium Inhaler.

THE benefits to be obtained from the use of a *neutral* nascent ammonium chloride vapour in middle-ear deafness are so well established, and have been so widely recognized, that it is a matter for regret to many medical men to have to discontinue ordering this treatment for their patients, owing to the uncertain and often irritating character of the vapour. The "Kloram" inhaler has been designed by Mr. Frank A. Rogers to obviate this drawback. It has further advantages, which may be briefly summarized as follows: It is simple and strong in construction; it has few working parts; the vapour produced is pure and neutral, and can be easily medicated and rendered antiseptic; furthermore, the inhaler is easily managed by the patient, it is self-contained within a case from which it need not be removed when required for use, and in which it can be readily stored when not in use; the directions for charging, using, and cleaning are given in the case, are clear and unmistakable, and everything necessary for a prolonged course of treatment is provided at the moderate and inclusive price of 7s. 6d., which in view of the time and trouble that have evidently been expended in perfecting the apparatus cannot be regarded as unreasonable.

THE INSTITUTE OF PHYSIOLOGY, UNIVERSITY COLLEGE.

THE new Institute of Physiology, an illustrated account of which was given in the JOURNAL of June 12th, was formally opened on Friday, June 18th, by the Right Hon. R. B. Haldane, Secretary of State for War. Professor M. J. M. HILL, Vice-Chancellor of the University of London, presided, and there was a large attendance. The number and splendour of the academic robes gave variety of colour to the scene. Among those present were Lord Reay (Chairman of University College), Lord Cromer, Lord Strathcona, Sir Archibald Geikie (President of the Royal Society), Sir Richard Douglas Powell (President of the Royal College of Physicians), Mr. Henry Morris (President of the Royal College of Surgeons), Sir William Church (President of the Royal Society of Medicine), Dr. H. A. Miers (Principal of the University of London), Sir John Tweedy, Sir Dyce Duckworth, Dr. H. T. Bovey (Rector of the Imperial College of Science), Sir Philip Magnus, M.P., Mr. H. T. Butlin, Sir John Batty Tuke, M.P., Sir William Ramsay, Professor Gotch (Oxford), Dr. Gaskell and Professor Langley (Cambridge), Professor Schäfer, Professor Verworn (Goettingen), Sir Victor Horsley, Colonel Lockwood, Sir William Gowers, Sir Thomas Barlow, Professor Halliburton, and the Hon. Sydney Holland.

After an introductory speech by Lord REAY,

Mr. HALDANE, who had previously inspected the laboratories, congratulated Professor Starling on having an equipment attached to the Chair of Physiology which put him in the first position in that respect among the universities of the world. He went on to speak of the vast development of university education in this country during the last twenty years. The founding of the University of Wales in 1893 had been followed by the incorporation of the universities of Birmingham, London, Liverpool, Manchester, Leeds, Sheffield, and Bristol. Ireland had now got two more universities; Scotland had always had four. In the United Kingdom there were now eighteen universities. Further, the development of university colleges—Reading, for example—had been very marked; and there had grown up in the last twenty years the great technical colleges. If the nation continued at that pace he should have no fear with regard to the future of the highest kind of education. The present condition of primary education stood in the way of the organization of secondary schools, and until these were organized the universities could not be given their properly defined place. Secondary education was perhaps the most backward in this country, and some of the best-known public schools were the slowest to see the wisdom of adopting leaving certificates and sending their pupils to the universities properly equipped. He hoped that people were waking up to the claims of university colleges. When he read, as he did with great interest, the obituary and testamentary records in the *Times* every day, he was delighted to observe that testators were more prone than they used to be to leave large sums for higher education. He hoped that tendency would grow. Mr. Haldane then declared the new institute open.

A vote of thanks was proposed by the PRESIDENT OF THE ROYAL SOCIETY, seconded by the PRINCIPAL OF THE UNIVERSITY, and supported by Professor STARLING, who spoke on behalf of the staff of the Institute. He referred to the presence of so many leading members of the medical profession and biologists representing the chief universities of the British Empire as well as of the Continent. "Those of our colleagues," he said, "who come from foreign countries to testify to the solidarity of science throughout the world, may perhaps have wondered why we should have invited the Minister of War to open these laboratories, and why this ceremony should be made at the same time an occasion for a military parade. They perhaps had not known that Mr. Haldane, in addition to the responsible position which he holds in the Cabinet, has for many years discharged the self-imposed duties of a Minister for Universities, and that his persistent advocacy of the cause of higher education, is due largely to the great development in university work in England, which has taken place during the last decade; nor are the two rôles so ably fulfilled by Mr. Haldane incompatible, for, after all, in this attempt to make voluntary training universal, beginning with the universities, he is teaching an individualistic race the great lesson which has to be learnt by every community—namely, the lesson of service. That, after all, is the aim of all education; on the learning of that lesson depends the man's future value as a citizen; on our success in inculcating that spirit in the new generation depends the survival or failure of our race. But I would have you see, as Mr. Haldane sees, that this devotion, this spirit of service to a national ideal, is but a phase in the development of the race. The same lesson of service must be learnt before we can hope to grapple successfully with the problems presented to us in our laboratories." "Already," he continued, "throughout the armed camps of Europe we have an ever-increasing body of men who in their laboratories devoted their lives to the service not of their nation alone but of the whole of humanity. It is these men who have honoured us by their presence to-day at the dedication of this home of science, this temple for the service of man. It is these men who, forming now a brotherhood within the nations, are working for the final brotherhood of all nations. That, I take it, is the ultimate goal of the eminent philosopher and statesman who to-day visits us in the guise of a Minister of War, who can see through and beyond the national army which he is creating to that further development which must be the final outcome of his efforts, when civilized man, like the science which is its leader, shall be but one nation, and these battalions but a memory of the playthings of man's childhood." Professor Starling concluded by saying that physiology was a pure science. Those who pursued it had as their immediate object merely the increase of human knowledge. They claimed that this increase was for the good of mankind, however remote the subject of their investigations might seem from the immediate needs of suffering humanity. It was only now and then, as it were, by chance, that their physiological researches resulted in some immediate method of successful treatment of disease. The greater part was the laying of the foundation on which the medicine of to-day and to-morrow must be built, and without which all practice must be pure empiricism. It was upon the medical profession they called to bear witness to the truth of this statement.

INSPECTION OF OFFICERS' TRAINING CORPS.

After the ceremony Mr. Haldane reviewed the University of London Training Corps drawn up in the south quadrangle in front of the institute. He expressed himself as highly pleased with the appearance of the men.

DINNER TO DR. J. F. W. TATHAM.

DR. J. F. W. TATHAM was entertained at dinner at the Grand Hotel, London, on June 17th, on the occasion of his approaching retirement from the position of Superintendent of Statistics, General Register Office, which he has held since 1893.

Sir SHIRLEY MURPHY was in the chair, and amongst those present were the Registrar-General (Sir William Dunbar), Mr. R. Brudenell Carter, Drs. Sidney Coupland, Arthur Newsholme, Franklin Parsons, R. Bruce Low, B. A. Whitelegge, C.B., G. Newman, J. C. McVail, A. K. Chalmers, R. Deane Sweeting, S. Monckton Copeman, F.R.S., Wilfred Fletcher, H. Timbrell Bulstrode, G. S. Buchanan, Squire Sprigge, Colonel Lane Notter, Colonel Firth, Mr. A. C. Waters, Mr. G. Udny Yule, Lieutenant-Colonel W. Grant Macpherson, C.M.G., Mr. R. O. K. Lempfert (representing Dr. W. N. Shaw, F.R.S.), Drs. J. Kerr, W. J. Simpson, Dawson Williams, J. F. J. Sykes, T. Hugh Dickson, F. E. Fremantle, R. Musgrave Craven, G. Millson, Paddock Bate, J. Niven, S. Barwise, W. A. Bond, C. W. F. Young, George Reid, J. M. Martin, Bushell Anningson, A. A. Mussen (representing Dr. E. W. Hope), J. F. Payne, F. J. Allan, T. H. C. Stevenson, Kenneth Goadby, Mr. George King, Mr. George H. Day, together with Drs. W. H. Hamer and Herbert Jones, who acted as secretaries.

The loyal toasts having been honoured, the CHAIRMAN proposed "The Health of Dr. Tatham." He spoke of his long connexion with the public health service as Medical Officer of Health of Salford and of the city of Manchester, and referred to his sixteen years in the office of the Registrar-General as the crowning work of his life. Though there might be some persons who would say that they had never heard of Dr. Tatham, every one engaged in public health work had every good reason for knowing how greatly this country was indebted to him.

He had succeeded in office two eminent men in Dr. Farr and Dr. Ogle. Dr. Farr had realized what could be made of the classification of diseases, and had produced a system which was so able that it only required modification in the manner subsequently adopted by Dr. Ogle and Dr. Tatham to bring it into line with modern scientific ideas. This work of the Registrar-General and of Dr. Tatham had, in his opinion, been a very active cause in diminishing the death-rate in this country. The tables that had been published in the reports of the Registrar-General constituted lessons of the very first importance, and there was no doubt that a great deal of light had been thrown on the causes of death among infants by the tables on infantile mortality. When the system of death registration was proposed in the early Seventies it was not intended at first that the cause of death should be included in the information recorded, and the requirement was only inserted by the House of Lords. In 1874 medical certification of the cause of death became compulsory, but prior to that date Dr. Farr had suggested to the Presidents of the Royal Colleges of Physicians and Surgeons and the Master of the Apothecaries Society that medical practitioners should be invited to certify voluntarily as to the cause of death. It might be said that diagnosis was the best guess that could be made in the circumstances, and Dr. Tatham and the Registrar-General had to accept the diagnoses which reached them. In order to clear up doubts in certain cases, the General Register Office had introduced a system of addressing an inquiry to medical practitioners, and as many as 5,000 such letters were sent out each year, involving a large amount of labour, which was, however, well rewarded by the more exact results obtained. Sir Shirley reminded his audience of the important part which Dr. Tatham had taken in instituting the system of interchange of records of infectious diseases, a work which he had to relinquish upon taking up his duties at Somerset House, but which was considered of such importance that it was taken over by the Local Government Board. Great changes had taken place in medical knowledge during the time that Dr. Tatham had been in the General Register Office, but he had been able at all times to place the best medical knowledge at the disposal of the Registrar-General. Outside the actual work of his office, Dr. Tatham had rendered excellent service to the State as chairman of the Statistical Committee of the Cancer Research Fund, and also as a member of the Departmental Committee on Physical Deterioration. Sir Shirley recalled with satisfaction the fact that so many of the responsible positions in the State service were recruited from the public health service, instancing Dr. Newsholme, Dr. Parsons, and Dr. Bruce Low at the Local Government Board, Dr. Whitelegge at the Home Office, and Dr. Newman at the Board of Education. He finally referred to Dr. Tatham as the willing servant of those engaged in public health work, and said that he had always been so ready to render help to all those who asked for it that they had begun to feel that they had a right to it.

Sir WILLIAM DUNBAR said that he had the permission of the Chairman to say how glad he was to be there to show his appreciation of the services to the State which Dr. Tatham had rendered, and also to thank the medical profession for the many ways in which they had helped him. He was in the fortunate position of being able to confirm as few people could all that had been said of Dr. Tatham's work. The seven years he had himself spent at Somerset House had been made appreciably pleasanter and happier because of his association with such an able colleague. He himself was not a statistician, so that it would have been quite impossible for him to have prepared his report on the last census without the assistance of Dr. Tatham, Mr. Noel Humphreys, and Mr. Waters. The declining birth-rate had caused a great deal of concern to many persons whose pessimistic views he did not endorse, and he could never agree with those who thought that England was going downhill.

Dr. TATHAM, in responding, said that he felt he did not owe the honour that had been done him to any merits of his own, but to the general feeling of comradeship that existed between members of the medical profession and himself. Statistics must always, he said, be defective, and to reduce those defects had ever been his first aim. Referring to the certification of the causes of death he said that the experience of the past sixteen years had led him to form a very high opinion of the care which medical men took in certifying those causes. Greater accuracy had certainly been secured from the replies which were received to the inquiries which were sent out from the Registrar-General's office for the purpose of clearing up doubtful points. Our own statistics, he maintained, would compare most favourably with those of foreign countries. He concluded by expressing the hope that his successor would be as fortunate as he had been in securing the loyal and disinterested support not only of his colleagues in the profession but of all the staff of the Registrar-General's office.

Dr. WHITELEGGE proposed the health of the Chairman, who responded.

MOTOR CARS FOR MEDICAL MEN.

COST OF RUNNING.

VIATOR writes: I agree with Dr. J. Bernard Wall that there must be something "radically wrong" if motor car expenses run up as some of your correspondents state. I have used motors now for more than five years, and find them cheaper than horses, while they are more satisfactory in every way. The expenses are very largely under the control of the owner. If he gets a good car to start with, and carefully studies the book of instructions which most makers supply, and sees that these instructions are really carried out, he will, I think, be surprised to find how low the expenses are. My own experience is that motors have lessened my expenses and increased my receipts.

NESTOR writes: The correspondence on the expenses of a motor car is interesting, and, taken in conjunction with the article on the financial prospects of the profession, I am rather inclined to agree with your original correspondent as to the difficulty of keeping a banking account and running a motor car. Thus a country practice making £900 gross receipts on an average may safely be considered a good practice. I think it is obvious that the stable expenses of such a practice should not exceed £150 a year at the most. Now "P. L. M." gives his annual expenses for an 8-h.p. two-seated Gregoire, including depreciation, as £103 8s. I am sure he has underestimated depreciation, as I cannot believe he would get £100 at the end of five years for a car which originally cost £220. Probably he would get £50.

Again, some of your correspondents mention the necessity of having two cars. I can well imagine it, but the cost would be ruinous to most men. In other words, to keep a small car, including depreciation, and adding the wages of a groom-chauffeur, would certainly amount to £160 a year or over. For the same money or less two horses, or perhaps, better still, a horse and a motor-cycle could be kept.

I think it is quite clear that motoring under the most lucky conditions is costly, and that men in practice are evidently increasing their running expenses without any corresponding gain in receipts. And so your original correspondent is not far wrong in his contention that running one motor car (apparently insufficient) is not compatible with keeping a banking account, and this taking a mileage of 6,000 miles a year.

CARS FOR THE TROPICS.

IGNORAMUS desires to learn of a good make of motor car (8 h.p.) suitable for Rangoon or Madras, and whether a good second-hand car could be obtained for £100.

THE first annual dinner of the Society of Tropical Medicine and Hygiene was held on June 18th at the Trocadero Restaurant, London, Professor Ronald Ross, C.B., F.R.S., the newly elected President, being in the chair. A large number of Fellows were present, and also many well-known guests, including Sir Archibald Geikie, President of the Royal Society; Mr. Henry Morris, President of the Royal College of Surgeons; Professor Count Mörner of Sweden, Colonel Seely, D.S.O., M.P., Under Secretary of State for the Colonies; Mr. Ramsay Macdonald, M.P.; Sir Alfred Jones, K.C.V.O., and Sir William Treacher. After the loyal toasts had been drunk, the toast of "The Society" was proposed by Colonel Seely and Sir Alfred Jones, the Chairman responding. In a very interesting speech, Colonel Seely made sympathetic reference to the men who had laid down their lives in the pursuit of tropical research abroad, and also indicated the intense interest the Colonial Office took in the schools and the work they were doing. Sir Alfred Jones spoke as to the progress sanitation had made in Africa, and what had been done to ameliorate the lot of the natives and white people living in these areas. The Britisher, he said, liked to get his twenty shillings for his pound, and by making these places healthier he would get it or more. Sir Patrick Manson proposed the health of the guests, and after responses had been made by Sir Archibald Geikie, Mr. Henry Morris, and Professor Count Mörner, the proceedings were brought to a close by the proposal of the Chairman's health by Mr. Ramsay Macdonald, M.P. The society, though only started two years ago, is now in a very flourishing condition, its Fellows numbering over 320.

EXPERIMENTS ON LIVING ANIMALS.

THE return showing the number of experiments on living animals during the year 1908, under licences granted under the Act 39 and 40 Vict., c. 77, has just been issued.

ENGLAND AND SCOTLAND.

Professor Thane's report contains the names of all "registered places." Three new places were registered for the performance of experiments, and three places were removed from the register during the year. All licensees were restricted to the registered place or places specified on their licences, with the exception of those who were permitted to perform inoculation experiments in places other than a "registered place," with the object of studying outbreaks of disease occurring in remote districts or under circumstances rendering it impracticable to perform the experiment in a "registered place." The names of all the persons who held licences during 1908 are given. The total number of licensees was 453. The reports furnished by the licensees show that 126 licensees performed no experiments. The number and nature of the experiments returned by each licensee are also stated. The experiments are, as usual, set forth in a Table (IV), which is divided into two parts—A and B—for the purpose of separating experiments which were performed without anaesthetics from experiments in which anaesthetics were used.

Number of Experiments.

The total number of experiments included in Table IV (A) is 2,851.

Of these there were performed:

Under Licence alone	1,452
,, Certificate C	156
,, Certificate B	989
,, Certificate B + EE	247
,, Certificate F	7

Table IV (B) is devoted entirely to inoculations, hypodermic injections, and some few other proceedings, performed without anaesthetics. It includes 85,783 experiments, whereof there were performed:

Under Certificate A	85,121
,, Certificate A + E	460
,, Certificate A + F	202

The total number of experiments was 88,634, being 15,260 more than in 1907; the increase in the number of experiments included in Table IV (A) is 271, and in Table IV (B) 14,989.

The Use of Anaesthetics.

The larger part of the experiments included in Table IV, namely, all performed under licence alone, under Certificate C, and under Certificate F (without A or B), 1,615 in number, come under the provisions of the Act that the animal must be kept under an anaesthetic during the whole of the experiment, and must, if the pain is likely to continue after the effect of the anaesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anaesthetic.

In the experiments performed under Certificate B, or B linked with EE, 1,236 in number, the initial operations are performed under anaesthetics, from the influence of which the animals are allowed to recover. The operations must be performed antiseptically, so that the healing of the wounds shall, as far as possible, take place without pain. If suppuration occurs, the animal must be killed. After the healing of the wounds, the animals are not even generally in pain.

In the event of a subsequent operation being necessary in an experiment performed under Certificate B, or B linked with EE, a condition is attached to the licence requiring all operative procedures to be carried out under anaesthetics of sufficient power to prevent the animal feeling pain; and no observations or stimulations of a character to cause pain are allowed to be made unless the animals are anaesthetized.

In no case has a cutting operation more severe than a superficial venesection been allowed to be performed without anaesthetics

The experiments included in Table IV (B), 85,783 in number, were all performed without anaesthetics. They were mostly inoculations, but a few were feeding experiments, or the administration of various substances by the mouth or by inhalation, or the abstraction of blood by puncture or simple venesection. In no instance has a certificate dispensing with the use of anaesthetics been allowed for an experiment involving a serious operation. Inoculations into deep parts, involving a preliminary incision in order to expose the part into which the inoculation is to be made, are required to be performed under anaesthetics.

Professor Thane goes on to say:

It will be seen that the operative procedures in experiments performed under Certificate A, without anaesthetics, are only such as are attended by no considerable, if appreciable, pain. The certificate is, in fact, not required to cover these proceedings, but to allow of the subsequent course of the experiment. The experiment lasts during the whole time from the administration of the drug, or injection, until the animal recovers from the effects, if any, or dies, or is killed, a period possibly extending over several days, or even weeks. The substance administered may give rise to poisoning, or set up a condition of disease, either of which may lead to a fatal termination. To administer to an animal such a poison as diphtheria toxin, for example, or to induce such a disease as tuberculosis, although it may not be accompanied by acute suffering, is held to be a proceeding "calculated to give pain," and therefore experiments of the kind referred to come within the scope of the Act 39 and 40 Vict., c. 77. The Act provides that, unless a special certificate be obtained, the animal must be kept under an anaesthetic during the whole of the experiment; and it is to allow the animal to be kept without an anaesthetic during the time required for the development of the results of the administration that Certificate A is given and allowed in these cases.

It must not be assumed that the animal is in pain during the whole of this time. In cases of prolonged action of an injected substance, even when ending fatally, the animal is generally apparently well, and takes its food as usual, until a short time before death. The state of illness may last only a very few hours, and in some cases it is not observed at all.

In a very large number of the experiments included in Table IV (B) the results are negative, and the animals suffer no inconvenience whatever from the inoculation. These experiments are therefore entirely painless.

In the event of pain ensuing as the result of an inoculation, a condition attached to the licence requires that the animal shall be killed under anaesthetics as soon as the main result of the experiment has been attained.

Explanation of Increase in Experiments.

It is explained that the increase in the number of experiments in Table IV (B), 1908, when compared with that of 1907, namely, 14,989, is mainly due to the 12,500 experiments performed on behalf of the Royal Commission on Sewage Disposal. These experiments consisted in exposing the ova and young of fish to the influence of effluents in different stages of purification and dilution.

During the year 1908, 40,870 experiments were performed at three institutions in the course of cancer investigations. Of these 233 are in Table IV (A), and 40,637 in Table IV (B). The latter were almost entirely inoculations into mice.

Experiments for Government and Public Bodies.

A large number of experiments, almost wholly simple inoculations and similar proceedings, contained in Table IV (B), were performed either on behalf of official bodies, with a view to the preservation of the public health, or directly for the diagnosis and treatment of disease. Several county councils and municipal corporations have their own laboratories in which bacteriological investigations are carried on, including the necessary tests on living animals; and many others have arrangements by which similar observations are made on their behalf in the laboratories of universities, colleges, and other institutions. A sewage farm is registered as a place in which experiments on living animals may be performed in order that the character of the effluent may be tested by its effects on the health of fish. The Board of Agriculture and Fisheries has a laboratory which is registered for the performance of experiments having for their object the detection and study of the diseases of animals. In other places experiments have been made on behalf of the Home Office, the War Office, the Colonial Office, the Local Government Board, the Metropolitan Asylums Board, the Royal Commission on Tuberculosis, the Advisory Committee for Plague Investigation in India, and the Tropical Diseases Committee of the Royal Society. Sixty-six licensees return over 12,000 experiments which were performed for Government Departments, county councils, municipal corporations, or other public health authorities; 2,332 experiments were performed by three licensees for

the Royal Commission on Tuberculosis; and thirteen licensees performed nearly 5,000 experiments for the preparation and testing of antitoxic serums and vaccines, and for the testing and standardizing of drugs.

Inspections.

During the year the usual inspections of registered places were made by Professor Thane and by Sir James Russell. They saw numerous animals under experiment, both of those coming into Table IV (A) and of those coming into Table IV (B); they everywhere found the animals suitably lodged and well cared for, and the licensees attentive to the requirements of the Act, as well as to the conditions appended to their licences by the Secretary of State.

Irregularities.

The irregularities which occurred during the year were few, and all arose from misunderstanding or inadvertence with respect to the extent or application of certificates. They were as follows:

One licensee performed 186 inoculation experiments in excess of the number for which the Certificate A had been given.

One licensee performed feeding experiments on seven puppies, one kitten, and two rodents without obtaining the necessary Certificate A (E).

One licensee exceeded the terms of his certificate, which authorized the abstraction of small quantities of blood, by bleeding to a considerable amount.

One licensee who held Certificate B, authorizing exposure to *x* rays and the application of heat to the skin under anaesthetics, carried out these procedures without an anaesthetic.

Two licensees holding Certificate A, authorizing experiments without anaesthetics, performed feeding experiments which were not indicated in their certificates.

By direction of the Secretary of State a suitable admonition was addressed to each of these licensees.

IRELAND.

Sir W. Thornley Stoker reports that in 1908 there were in Ireland fifteen registered places; in three of them no person was licensed to perform experiments during the year 1908. Twenty licences were in force during the year, of which thirteen were in existence at the beginning of the year, and seven were new licences issued during the year.

Number of Experiments.

The experiments performed were 390 in number; 42 under licence alone, and 348 under certificates. Sixteen licensees performed experiments. Twenty licensees held 37 certificates, of whom 14 performed experiments, namely:

Under	Certificate A	322
,,	Certificate C	21
,,	Certificate E + A	2
,,	Certificate EE + B	1
,,	Certificate F	2

Animals Used.

The animals experimented on were as follows: Guinea-pigs, 208; mice, 113; rabbits, 38; dogs, 15; cats, 3; sheep, 3; cattle, 3; fowl, 3; horses, 2; goat, 1; rat, 1.

Nature of Experiments.

The experiments were very various, and included studies of the mechanism of respiration, blood pressure, and cardiography. The differentiation of various forms of blood stains, the diagnosis of cattle diseases, the consideration of questions concerning food poisoning, of typhoid fever, of the actions of various drugs on the heart and blood, of tuberculous milk, of the action of the vagus nerve, of the diagnosis of urinary diseases, were all matters considered. The study of meningeal cocci, of gland secretion, of the etiology of pulmonary tuberculosis, and cerebro-spinal meningitis of the epidemic form, were also subjects of investigation.

No Abuse.

The work done in Ireland under the Act was, in the inspector's opinion, free from abuse, and was sincere and well intentioned. The increase in the number of licensees and of their experiments is to be attributed to the study of new investigations and treatments of disease by means of antitoxins, serums, and vaccines. This branch of physiological and pathological work, says the inspector, is of great value and importance, is unattended by more than very slight pain, and promises even greater results in the future than it has achieved in the past.

THE ROYAL COMMISSION ON THE POOR LAW AND THE RELIEF OF DISTRESS.

INFANT MORTALITY IN WORKHOUSES.

IT is a somewhat unusual thing for a Government Department to issue a memorandum finding fault with the statistics and deductions given in a report by a Royal Commission, but a few weeks ago the Local Government Board issued to Parliament a memorandum distinctly controverting the statistics about infant mortality in workhouses given by the Minority Report of the Poor Law Commission. Sufficient time has now elapsed, but the only reply, by one of the signatories to the Minority Report, has been a reiteration of the statistics and the deductions from them. There has been no attempt to deal with the fundamental objections of the Local Government Board against the reliability of the statistics, and it would seem as if the force of these objections and the seriousness of issuing figures which are open to the charge of being misleading was hardly realized. The seriousness of the matter is all the greater because the figures and the method of argument adopted by the Minority Report would involve a charge against not only the workhouses, but against some of the best conducted maternity hospitals of the metropolis. This may not have been intended, but it is a logical deduction. It would therefore seem to be necessary again to emphasize in an elementary way the contention of the Local Government Board that the statistics on infant mortality given by the Minority Report are quite unreliable, and from their very nature give no warrant by themselves for the conclusions drawn from them.

It is not necessary again to quote at length from the Minority Report, as this has already been done in the issue of the JOURNAL for February 27th, pp. 546–8, to which and to the report itself reference should be made, but a brief summary may be convenient. It appears that something like 11,000 children are born every year in the workhouses of England and Wales, and a member of the Commission was able to get some information from 450 workhouses in which 8,483 infants were born in 1907. We are told that "out of these 8,483 infants no fewer than 1,050 actually died on the premises before attaining one year." This is about 123 per 1,000, but of course this figure is quite useless for so floating a population, and in order to get statistics that it was thought might be compared with statistics given by the Registrar-General for the whole population, the Minority Commissioners hit on the extraordinary and fallacious device of assuming "that those who left the workhouse within the year had a death-rate equal to those remaining in the institution," and having made this assumption they conclude as follows:

The result appears to us somewhat startling. The infantile mortality in the population as a whole, exposed to all the dangers of inadequate medical attendance and nursing, lack of sufficient food, warmth, and care, and parental ignorance and neglect, is admittedly excessive. The corresponding mortality among the infants in the Poor Law institutions, where all these dangers may be supposed to be absent, is *between two and three times as great.* Out of every 1,000 babies born in the population at large, 25 die within a week, and 132 are dead by the end of the first year. For every 1,000 children born in the Poor Law institutions 40 or 45 die within a week, and, assuming the mortality among those who are discharged to be the same as those remaining, no fewer than 268 or 392 will be found to have died by the end of the year, the number varying according to whether we take the experience of the Poor Law institutions for legitimates or for illegitimates in the metropolis or elsewhere.

Now it is evident that while accurate figures are obtainable for the first week or two, as all the infants remain on the premises for about that time, the figures for the annual mortality are, on the other hand, on quite a different footing, depending on an assumption that is open to question. Separate consideration is therefore needed.

Taking the annual figures then first, we are told that "more than half the mothers discharged themselves within a month, one-eighth of them indeed within a fortnight." Others of course may be assumed to have taken their discharge at varying times within the year, so that comparatively few would remain for the whole year. Further, it is practically certain that infants ailing from

birth would be retained in the workhouse, while the strong mothers with their strong infants would be more likely to take their discharge. Thus the workhouse would retain most of the bad lives and discharge most of the good lives. Again, of the healthy infants discharged into good homes, only few would be readmitted to the workhouse; their death-rate would be low, and it is altogether unwarrantable to assume without reason that their death-rate is equal to that of those retained in the workhouse. On the other hand, many of the infants discharged would be taken to the worst of slum homes where they would be badly clothed, badly nursed, and badly fed, and when their health had been ruined and their death practically determined by conditions *altogether outside the workhouse* many of them would be returned to the workhouse when it was too late to save them. In this way, then, the workhouse would be not simply a maternity home or an ordinary nursing home, but also a sort of hospital for incurables, whose death-rate is almost beyond control. In addition to all this, the general type and character of the parents is such that we might naturally expect that the death-rate of the infants would be high, however efficient the workhouse might be. In the House of Commons recently Mr. Burns said, "It ought to be remembered that many of the mothers of the children born in workhouses had been cruelly beaten, overworked, and badly treated generally before their admission, and the offspring of such mothers could not be expected to be as healthy as children who were differently placed." The report itself acknowledges this in quoting the words of an inspector describing the character of the mothers:

> Poor girls refused the shelter of their own homes in time of trouble; syphilitic patients; women who have been knocked about, neglected, and illtreated up to the last minute; cases actually in labour when admitted; in fine, all sorts and conditions of poor women, who have nowhere else to go, find their way to the Poor Law maternity wards.

And yet, though the report acknowledges this and admits the shortcomings of its statistics, it still harps on the death-rate as if the workhouses were responsible for it. The report further compares the annual infant mortality of 10 workhouses in which 493 infants were born with another 10 in which 333 were born. In the first 10 the annual infant mortality was 30 per 1,000, and in the second 10 it was 330 per 1,000. It is implied here that the first ten were models of maternity and nursing homes, and that the second ten, having a mortality eleven times as high, must have been everything that is bad. But nothing of the sort is proved by the figures alone; they are open to the same fallacies as are noted above, and, in addition, the varying character of the contributory population is ignored. As the Local Government Board points out, very different results may, to take an extreme example, be expected in workhouses where healthy farm servants are the inmates from those where only slum dwellers are dealt with. Common fairness of debate ought to have prevented the use of statistics which are inherently so unreliable and misleading. To bolster up even a good case with arguments which might catch the unthinking but the fallaciousness of which is obvious on the slightest examination, is apt to throw some suspicion on the whole case, which may be undeserved.

Again, dealing with the deaths that occur within the first week or two after confinement, we are told that while in the general population 25 out of every 1,000 born die within a week, in the workhouses 40 to 45 die. This is confirmed by figures furnished by the Local Government Board for the whole of the metropolitan Poor Law institutions, which show that the infant mortality during the first week is 42.2 per 1,000 births, which is nearly double the corresponding rate for the general population of London. But a totally different complexion is put on the figures from what the Minority Report implies when the causes of the deaths during the first week are examined. The Local Government Board finds that over 50 per cent. of the deaths are due to premature birth, 41 per cent. to congenital defects, atrophy, debility, marasmus, and inanition, 2.6 per cent. to congenital syphilis, 3.5 per cent. to difficult labour and asphyxia, and 1.8 per cent. to convulsions—all causes mostly due to prenatal and maternal conditions entirely independent and unconnected with the workhouses. In other words, it is the character of the material that is at fault, not either the ability or the care bestowed on it in the workhouses. In the second week of life the death-rate was actually slightly lower in the workhouses than in the general population; but even so early as this the numbers remaining in the workhouses were becoming too small for any trustworthy statistics to be based on them, as half the children leave the institutions within three weeks of birth. After that time the deaths include a proportion of infants readmitted after being exposed to all sorts of injurious conditions outside the workhouses.

The Minority Report points to the Plaistow Maternity Charity, which deals with women in their own homes in West Ham, and has an infant mortality of only 15.3 per 1,000 births in the first fortnight, while the four large voluntary maternity hospitals in London have an average rate of 30 per 1,000, and the Poor Law institutions of the metropolis a rate of 46 to 47. If the Minority argument is of any value it would show that the Plaistow nurses are able to manage better in the wretched slum houses of West Ham than in the well-equipped voluntary hospitals, with all their appliances and competent attendance. But, of course, nothing of the kind is proved by the figures. The different results may be explained by the different character of the patients, and no comparison of figures is of the slightest value. Labours conducted in the patients' homes will be mostly normal, while the hospitals get the most dangerous cases where the infants are most likely to suffer. Of so little value are such numerical comparisons that it may easily be the case that a hospital with a death-rate of 50 may really be better managed and more efficient than another with a death-rate of only 10, or, to take a concrete case, it by no means follows that the General Lying-in Hospital, which has an infant death-rate of 59 per 1,000 in the first fortnight, is worse conducted than the City of London Lying-in Hospital, where the death-rate is only 20.4. If the number of patients be small and the nature of the cases be not taken into account, the fallacy of any figures ought to be obvious, and to say that "it cannot be right that there should be workhouses in which 40 per cent. of the babies die within the year" is a statement that shows an utter failure to grasp the significance of varying conditions. Such a death-rate is deplorable, but it may not be the fault of the workhouses at all.

These remarks must not be taken to denote any desire to palliate or excuse any bad management of either lying-in wards or nurseries. Their only object is to point out that the extraneous conditions vary so immensely, not only in different workhouses, but in the same workhouse at different times, that it is practically impossible to frame any statistics that can be fairly comparable with one another, and the demand for such statistics by the "State Children's Association" cannot be gratified. There may be perfect management with high death-rate, and bad management with low death-rate. The only test of efficiency is careful inspection by competent experts. Numerous witnesses whose ability to judge is unquestioned have testified that the management in some workhouses is lamentably bad both in lying-in wards and nurseries, and it is a matter for satisfaction that Mr. Burns has assured the House of Commons that special investigations were being made by the medical department of the Local Government Board, and that a report would be issued. Meanwhile, when Dr. Downes and Dr. McVail testify to the "admirable work and the extraordinary success" of some workhouses in their maternity wards and nurseries, it is not fair to assume for one moment that they are attempting to whitewash the faults of others. Nothing will ever be gained by exaggeration. It is indeed an open question whether the wholesale condemnation of the lying-in wards and nurseries may not have the apparent effect of raising their death-rates by deterring poor women of good character from entering, while the prostitutes and women of the worst classes whose babies are more likely to die, and who are often rather pleased that they should die, will enter as freely as ever. The workhouse already attracts the class that it ought to repel, and repels the class that it might benefit. One would imagine that the Poor Law is deterrent enough already without making it still more deterrent to decent poor women. But perhaps it is thought that it will help the crusade against workhouses.

THE DARWIN CENTENARY AT CAMBRIDGE.

The centenary of the birth of Charles Darwin has been celebrated this week with much ceremony at Cambridge. Darwin was born on February 12th, 1809, and an article on his early career and his relation to medicine appeared in the Journal of February 13th; we need not dwell further on the subject here. Two hundred and thirty-five universities, 167 of which are foreign or colonial, sent delegates to do honour to the memory of one of Cambridge's greatest sons.

Medical Delegates.

Among the delegates were many members of the medical profession. Among the representatives of British medical bodies were the President of the Royal College of Surgeons of England; Dr. A. J. Horne, President of the Royal College of Physicians of Ireland; Dr. W. A. Jamieson, President of the Royal College of Physicians of Edinburgh. The Royal College of Physicians of London was represented by Dr. Norman Moore. Among the delegates of the University of Oxford was Professor Gotch. The University of Edinburgh was represented by its Principal, Sir William Turner; that of Glasgow by its Principal, Sir Donald MacAlister; that of Aberdeen by Professor Trail, M.D. Among the French delegates were Professor Le Dantec, of Paris, and Dr. Metchnikoff, of the Pasteur Institute; among the German were Professor Waldeyer, of Berlin, Professor Max Verworn, of Goettingen. The University of Melbourne was represented by Dr. C. J. Martin, Director of the Lister Institute; the University of Toronto by Professor T. G. Brodie.

Publications.

Some interesting literature has appeared in connexion with the Centenary. The *Order of the Proceedings at the Darwin Celebration held at Cambridge, June 22–June 24, 1909*, printed at the Cambridge University Press, contains a fine photograph of the author of *The Origin of the Species*, as he was in 1881, and another photograph taken in 1849. There is an interesting sketch of his life, with photographs of persons and places connected with him, such as John Stevens Henslow, who may be said to have launched him on his career as a naturalist, Sir Joseph Dalton Hooker, Mrs. Darwin, Darwin's birthplace at Shrewsbury, his rooms in Christ's College, his house at Down in Kent, and H.M.S. *Beagle*, in which he made his memorable voyage.

The *Christ's College Magazine* has issued a Darwin Centenary Number, which contains a large amount of interesting matter about Darwin's Shrewsbury days; Darwin at Cambridge and at Edinburgh; Christ's College in the days preceding his entry; letters from him to A. R. Wallace; and a list of plants named after him.

A publication of special interest is *The Foundations of the Origin of Species*, a sketch written in 1842, and edited by his son, Mr. Francis Darwin, who contributed an introduction in which the evolution of his father's thought is traced. It is printed at the Cambridge University Press.

Address of the President of the Royal College of Surgeons of England.

The following address was presented by Mr. Henry Morris, in the name of the Royal College of Surgeons of England, of which he is President. We are happy to be able to print it in full, as it is particularly interesting to members of the medical profession:

The Council, Fellows, and Members of the Royal College of Surgeons of England experience in a very special degree a deep sense of gratification in having been honoured by an invitation to send a delegate to the Commemoration by your university of the centenary of Charles Darwin's birth and the fiftieth anniversary of the publication of his great epoch-making work *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life.*

We feel a peculiar, indeed an almost personal and certainly a professional, pride in taking part with your great commonwealth of learning and knowledge as a whole, and with Christ's College, and the Faculty of Natural Sciences in particular, in this In Memoriam celebration of one who in so conspicuous and brilliant a manner added lustre to this great and ancient university.

The numerous, and intimate personal, and family associations of Charles Darwin with the University of Cambridge are equalled by similar connexions with the profession of medicine. We are mindful that his grandfather, the celebrated scientist and poet, Dr. Erasmus Darwin, was a physician at Litchfield, and afterwards at Derby; that his father was a very successful medical practitioner at Shrewsbury; that his only brother was a Bachelor of Medicine of Cambridge, and that his paternal uncle and he himself were intended for the medical profession, and actually studied physic at the University of Edinburgh.

The sciences to which Charles Darwin devoted his life and on which he built his great generalizations are, some of them, ancillary to medicine, and, as developed and interpreted by him, they transfigured many of the doctrines and classification of disease, illumined with new conceptions pathology as well as biology, and opened up fresh avenues of thought, and new pathways of investigation, leading to a more correct and scientific knowledge and practice of the resources of surgery.

To the museum of our college Charles Darwin presented about thirty valuable specimens of fossil mammalia collected by him during the voyage of the *Beagle*, a fact which may not be generally known.

To the students of medicine as well as to the students of general biology Darwin has left on record a caution of the utmost importance, and at no period more than at the present time have they had greater need to be reminded of it. He tells in his autobiographical recollections how his neglect of dissecting when a student in Edinburgh "proved one of the greatest evils of his life"; how the anatmoical knowledge and aptitude he would have gained by the practice of dissection would have been invaluable for all his future work; and how the want of these and his incapacity to draw had been an "irremediable evil," and that "a great pile of manuscript" which he had made during the voyage of the *Beagle* had in consequence "proved almost useless."

Charles Darwin esteemed it a high honour to have been elected an honorary member of the Royal Medical Society of Edinburgh, and an original honorary member of the Physiological Society which was founded in London in 1876. By his efforts to forward legislation on the question of vivisection, by his private communications to physiologists and others, and by his letters to the editor of the *Times* "on the right of experimenting on living animals" he showed the righteousness as well as the wisdom of his judgement by denouncing the practice of vivisection for "mere damnable and detestable curiosity," whilst he endeavoured to obtain "justice to science," and gave proof of his willingness to bear his "share of the abuse poured in so atrocious a manner on all physiologists." Though, in his own words, "Hippocrates had taken the wind out of my sails," though when informed of the views on pangenesis of this philosopher of antiquity Charles Darwin admitted they seemed almost identical with his own, and although theories somewhat akin to those of the *Origin of Species* had been advanced by Buffon, Lamarck, and Erasmus Darwin, and the principle of natural selection had been enunciated by Dr. Wells and Mr. Matthews, yet the central hypothesis of the *Origin of Species* came in 1859 as a revelation to the historians of scientific ideas as well as to all the biological specialists then living. Charles Darwin knew that he was regarded as "the greatest revolutionist in natural history of that if not of all centuries," and he naturally yearned for some half-dozen great and sound scientists to accept his views, for then he would have no fear of their ultimate success.

And whose were the opinions he most especially valued and "longed to learn"? They were those of J. D. Hooker, Charles Lyell, Huxley, Richard Owen, W. B. Carpenter, Milne-Edwards, and Asa Gray, every one of whom, except Sir Charles Lyell, had received a medical education, and was the holder of a medical degree, or other medical qualification. Two of them, Huxley and Owen, had been intimately associated with the Royal College of Surgeons of England—Huxley as a member of the college and Hunterian Professor, and Owen as a member and Fellow of the college and Hunterian Professor and Conservator of the Hunterian Museum for many years. Hooper and Huxley were the most sympathetic exponents and staunchest champions of the Darwinian principles, and if Owen never actually expressed a definite opinion of Darwinism, he at least inclined to the theory of "natural

selection," and conduced to the writing of a letter in which Charles Darwin evinced a candour, a modesty, a tolerance of disagreement, and an indifference to the claims of priority which so supremely characterized him throughout his whole scientific career.

It is interesting to us who are connected with the College of Surgeons to recall that in 1859 Owen delivered the Rede lecture at Cambridge—his subject being the classification of mammalia—and that he then received the degree LL.D., thus becoming the recipient of the first honorary degree ever conferred by this university. Also, in the same year, the remains of John Hunter, the great founder of scientific surgery, the fruits of whose labours will for all time be the chief glory of our college, were removed from the vaults of St. Martin's-in-the-Fields to Westminster Abbey. If, instead of the reinterment of the body—lifeless for sixty-six years—Hunter could have been restored to life in this world, it is only reasonable to conclude, from the opinions expressed in several of his writings, that he would have greeted the *Origin of Species* with great delight, and would have given it the readiest and fullest acceptance.

For these, amongst other more general reasons, does our college, with special zest and gladness, beg to offer to the university our best wishes for the success of these memorial ceremonials, and to thank her for affording us the pleasure and satisfaction of joining with the representatives of the liberal arts and sciences from all parts of the world in this tribute of honour to the name and fame of one of her most illustrious sons.

THE THERAPEUTIC APPLICATIONS OF RADIUM: METHODS AND RESULTS.

TREATMENT OF INOPERABLE CANCERS BY RADIUM.

OUR Paris Correspondent writes that at the last meeting of the Académie de Médecine Dr. Dominici made a communication on the results he had obtained in the treatment of deep-seated inoperable cancers by radium, used in a hollow apparatus containing the pure radium salt, the radiations from which were filtered through a sheath of a dense metal such as gold or silver. This apparatus was inserted into the mass of the cancerous tissues. Dr. Dominici reported the following results:

1. The disappearance of a malignant tumour of the parotid, a lymphadenoma treated in the wards of Dr. Bazy, by the introduction into the substance of the tumour of an apparatus containing 5 mg. of pure radium bromide enclosed in a gold cylinder, the wall of which was $\frac{1}{10}$ mm. thick. The apparent cure had lasted for six months.
2. The amelioration of an inoperable sarcoma of the neck, treated in the wards of Dr. Regnier by the introduction into the mass of the tumour of a silver apparatus $\frac{1}{10}$ mm. thick, the cavity of which contained 5 cg. of pure radium bromide. The sarcoma had decreased in volume and become mobile enough to allow M. Chifohain, assistant to Dr. Regnier, to remove the tumour surgically, which had till then been impossible.
3. The disappearance of a cancer of the parotid (epithelioma) treated by the same method in the wards of Dr. Schwartz.

Other malignant tumours, of different kinds and in various situations, treated in the wards of Drs. Segond, Tuffier, and Picqué, had been ameliorated. Dr. Dominici did not consider as definitely cured even those tumours which had disappeared for several months, for metastasis might have occurred and the fear of recurrence was still present; but the observations showed that (1) inoperable tumours had been rendered operable, and that (2) general disorders and the local lesions of patients with tumours in the presence of which the surgeon was powerless had been suppressed or greatly attenuated.

THE twenty-ninth annual meeting of the Ontario Medical Association was held in Toronto on June 1st, 2nd, and 3rd. There was a large attendance, and a number of valuable papers were read, among others one by Dr. Deaver, of Philadelphia, on Diffuse Peritonitis, which aroused a good deal of discussion, the point in dispute being the advisability of the author's method of mopping the infected peritoneum. Dr. L. Emmett Holt read a paper on Results of the Serum Treatment of Cerebro-spinal Meningitis, with report of some 700 cases. Dr. Osler gave the address on Medicine; a Philosophical Study of the Practice of Medicine.

BRITISH MEDICAL BENEVOLENT FUND.

AT the June meeting of the committee fifteen cases were considered and grants amounting to £129 made to twelve of the applicants, two cases being passed over and one postponed for further inquiry. Dr. F. G. Crookshank was appointed honorary local secretary at Barnes and Dr. C. E. Solomon an additional local secretary at Liverpool. Appended is an abstract of the cases relieved:

1. M.R.C.S., L.R.C.P., aged 38. Has had a small country practice, but for the last eight months has been incapacitated by general paralysis of the insane, and is now confined in an asylum. Small savings have been quite exhausted by providing a locumtenent and by unavoidable expenses of the illness, and so far it has not been possible to sell the practice. Two children, the younger only a few months old. Voted £10 to the wife.
2. Daughter, aged 53, of late M.R.C.S., L.S.A. No income; health too indifferent to undertake laborious or continuous work, but obtains a light post as companion when able to do so. Relieved three times, £30. Voted £10.
3. Daughter, aged 58, of late L.S.A. No income; has supported herself as housekeeper or companion for the last fourteen years, but is now incapacitated by locomotor ataxy. Voted £12.
4. Widow, aged 63, of M.D.Edin. Quite unprovided for at husband's death eighteen months ago, and endeavours to make a living by letting lodgings. Is allowed a few shillings a week by some distant relations. Voted £6.
5. Widow, aged 90, of F.R.C.S. Since husband's death has been living on the proceeds of the sale of furniture, and now receives an old age pension. No children; is quite blind. Voted £18.
6. Daughter, aged 52, of late L.R.C.P.Edin., L.S.A. Unable to earn a living on account of heart disease and defective eyesight, and is dependent on two sisters. who have to support themselves, and can ill afford to help. Relieved four times, £36. Voted £10.
7. Daughter, aged 60, of late M.R.C.S., L.S.A. Has a pension of £14 a year from the Admiralty and receives a little help from Lloyd's Patriotic Fund. Relieved twelve times, £70. Voted £5.
8. Daughter, aged 62, of late M.R.C.S., L.S.A. No income, and, being mentally deficient, is dependent on a relation who can only help with difficulty. Relieved three times, £36. Voted £12.
9. Widow, aged 62, of L.R.C.P., L.R.C.S.Edin. Since being left a widow, nearly fifteen years ago, has supported herself by taking lodgers, but finds the necessary work increasingly difficult. Two children, one just self-supporting, the other still at school. Relieved twice, £24. Voted £12.
10. Widow, aged 31, of L.S.A. No income; endeavours to maintain herself by nursing, but has been incapacitated during the last three months by acute rheumatism, and is told that a rest is absolutely essential before taking further cases. Three children, 10 to 3. Relieved twice, £15. Voted £10.
11. Widow, aged 58, of L.R.C.P., L.R.C.S.Irel. Since husband's death has endeavoured to support herself by maternity nursing, but is now nearly blind. Relieved fifteen times, £137. No children. Voted £12.
12. Widow, aged 59, of M.D.St. Andrews. No income; slight occasional help from children. Lets lodgings, but has been obliged to part with some of her furniture to make both ends meet. Relieved five times, £60. Voted £12.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, London, W.

LITERARY NOTES.

WE are informed by Professor Dr. Pilcz, of Vienna, that the official general report of the Third International Congress on the Nursing of the Insane will be published in July. A copy will be sent to each member of the Congress. Non-members may obtain the report from C. Marhold, Halle.

The first number of a new medical journal entitled *Heart*, dealing exclusively with the circulatory system, will be issued early in July. The aim of the journal is to further the progress of knowledge of the mechanism by which the blood circulates in health and disease. The editor is Dr. Thomas Lewis, who will be aided in the selection of papers by Dr. W. H. Gaskell, Professor A. R. Cushny, Dr. J. Mackenzie, Professor A. W. Hewlett (Ann Arbor), and Professor G. N. Stewart (Cleveland). Among the collaborators are Sir T. Clifford Allbutt, Professor Rose Bradford, Sir Lauder Brunton, Dr. G. A. Gibson, Professor F. Gotch, Dr. T. W. Griffith, Dr. W. P. Herringham, Professor A. Keith, Professor J. A. MacWilliam, Dr. S. J. Meltzer (New York), Professor Joseph L. Miller (Chicago), Sir Richard Douglas Powell, Professor E. H. Starling, Professor Graham Steell, and Professor G. S. Woodhead. The first number will contain a prefatory note by Dr. W. H Gaskell, an editorial preface, and the following papers:

Professor A. R. Cushny, on the irregularities of the mammalian heart observed under aconitine and on electrical stimulation; Dr. James Mackenzie, on nodal bradycardia; Dr. Thomas Lewis, on paroxysmal tachycardia; and Dr. Leonard Hill, on the measurement of systolic blood-pressure in man. The journal will be issued, as far as possible, at regular quarterly intervals, and each volume will consist of four numbers. The publishers are Messrs. Shaw and Sons, Fetter Lane, Fleet Street, London, E.C.

On June 13th the Frankfort Medical Association celebrated the centenary of the birth of Dr. Heinrich Hoffmann. Dr. Hoffmann was Medical Director of the Frankfort Lunatic Asylum, and during the fifty years of his connexion with that institution he made it so widely known that sufficient funds were collected to rebuild it at a cost of 600,000 gulden. Distinguished as was his medical work, Dr. Hoffmann was probably still better known as the author of the famous nursery book, *Struwwelpeter*. He also wrote a large number of epigrams, satirical or humorous sketches, and poems on a variety of subjects.

In the current number of the *Cornhill Magazine* Canon John Vaughan gives an interesting account of a forgotten botanist of the seventeenth century. He says that when Dr. William Tanner, Dean of Wells, in the reigns of Edward VI and of Queen Elizabeth, published his black-letter *Herbal* only some 300 British species of plants were enumerated. A century later the number of plants in Ray's *Catalogue* had risen to 1,050; and when in 1696 the second edition of his "Synopsis" was published fully 1,600 species are described. In many instances the names of those who by their discoveries had thus helped to enrich our knowledge of British plants are duly remembered. The labours of such men as Lobel, Gerard, Johnson, Parkinson are abundantly evident in their writings. In some cases the finder's name has been bestowed upon the plant itself, and in this way the services of Sherard, Sibthorp, Teesdale, and others have been commemorated. In many instances, however, the honour due to our early herbalists has been but scantily recognized, and the names of several who rendered distinguished service to the science in its early days have passed into almost total oblivion. Amongst these we would venture, as a conspicuous example, to place the name of Mr. John Goodyer, of Maple Durham, in Hampshire. His services are repeatedly acknowledged in contemporary botanical literature; by virtue of the large number of rare plants which he discovered he should, undoubtedly, be placed at the head of our Hampshire botanists, and yet his name is passed over in silence in the *Dictionary of National Biography*, and the very identity of his place of residence has been called in question. Parkinson writes a few years later, speaking of him in his *Theatrum Botanicum*, published in 1640, as "a great lover and curious searcher of plants, who hath found in our country many plants not imagined to grow in our land." He is mentioned by Dr. How in his *Phytologia*, and Merret, in his *Pinax*, speaks of him as "an incomparable botanist, of sound judgement and of immense industry." Ray frequently acknowledges his services both in the "Synopsis" and in the "List of Rare Plants," which he supplied to Gibson's edition of Camden's *Britannia*. And Pulteney, in his Botanical "Sketches," published in 1790, thus sums up the very brief notice of his work:

> The great number of rare English plants which Mr. Goodyer brought to light entitles him to the most reputable rank among those who have advanced the botanical knowledge of the kingdom.

At Maple Durham, then, either in the larger or the smaller house, Mr. John Goodyer lived during the first half of the seventeenth century. There he had a fine garden, or, rather, "gardens and orchards," in which he cultivated rare and curious plants. We find him supplying the famous Mr. Parkinson with the seeds of wild lettuce, the juice of which plant, he says, hath "a very strong and grievous smell of opium." He doubtless visited the different Physic Gardens, at that time beginning to spring up in various parts of the country, such as those at Oxford and Holborn, the one, it may be, in company with Mr. William Brown, Fellow of Magdalen, and the other with old John Gerard himself, who cultivated, we are told, "near eleven hundred sorts of plants." He seems to have been the first to describe the male fern, which he found "growing abundantly on the shadowie moist rockes by Maple-Durham neere Petersfield, July 4th, 1633." He was also the first to discover the Narrow-leaved Lungwort, or "Long-leaved Sage of Jerusalem" (*Pulmonaria angustifolia*, L.) to be a British plant. He found it "May 25, anno 1620, flowring in a wood by Holbury house in the New Forest." This is one of our most interesting Hampshire plants, not only because it is confined almost entirely to the New Forest and the Isle of Wight, but also on account of the use made of it by the old herbalists in cases of pulmonary diseases. Another plant of famous medicinal virtue, which Goodyer found plentifully "in the unmanured inclosures of Hampshire and on chalky downes," was the Purging or Cathartic Flax, which he calls "Mill-mountaine." His account of how he came to know the name and properties of this plant is so quaint as to be worth quoting in full:

> On the second of October 1617, going to Mr. Colsons shop an Apothecarie of Winchester, I saw this herbe lying on his stall, which I had scene growing long before; I desired of him to know the name of it; he told mee that it was called Mill-mountaine; and hee also told me, That being at Doctour Lake his house at Saint Crosse a mile from Winchester, seeing a man of his have this herb in his hand, he desired the name; hee told him as before, and also the use of it which is this: Take a hand full of Mil-mountaine, the whole plant, leaves, seeds, floures and all, bruise it and put it in a smal tunne or pipkin of a pinte filled with White Wine, and set it on the embers to infuse all night, and drinke that Wine in the morning fasting. This Dr. Lake was afterwards made Bishop of Bathe and Wels, who always used this herbe as his physic, after the said manner, as his man affirmed.

The medicinal qualities of plants had a great fascination for our friend Mr. Goodyer, as indeed they had for all early botanists. He is ever on the look-out for information as to the virtues of herbs, and he sometimes meets with it in unexpected quarters. The corn-parsley he had for years observed in the clay grounds around his home, but it was not till the year 1625 that he realized what a wonderful virtue it possessed. This is the story:

> I saw Mistris Ursula Leigh (then servant to Mistris Bilsom at Maple-durham, and now (5 Martii 1632) wife to Mr. William Mooring, Schoolemaster of Petersfield, a Towne neer the said Maple Durham) gather it in the wheate ershes about Maple Durham aforesaid, who told mee it was called Hone-wort, and that her Mother Mistris Charitie Leigh, late of Brading in the Isle of Wight, deceased, taught her to use it after the manner here expressed, for a swelling which she had in her lefte cheeke, which for many yeares would once a yeare at the least arise there, and swell with great heate, rednesse and itching, until by the use of this herbe it was perfectly cured and rose no more nor swelled, being now (5 Martgii 1632) about twenty-three yeares since, only the fear remaineth to this day. This swelling her mother called by the name of a Hone, but asking whether such tumours were in the said Isle usually called Hones she could not tell, by reason she was brought from Brading aforesaid young, and not being above twelve yeares old when she used the medicine.

Mr. Goodyer then describes how, instructed by Mistris Leigh, the parsley should be used:

> Take one handfull of the greene leaves of the Hone-wort, and stamp them, put to it about halfe a pint or more of beer, straine it, and drink it, and so continue to drink the like quantity every morning fasting, till the swelling doth abate, which with of in her was performed in the space of two weeks at the most.

John Goodyer died in the spring of 1664, and was buried, as he directed in his will, in "the churchyard of Buriton, near his late wife."

IN connexion with the cheerless weather of this summer it is interesting to find that a similar condition of affairs existed in London exactly one hundred years ago. The Quarterly Report of Diseases treated at the Public Dispensary, near Carey Street, London, from May 31st to August 31st, 1809, has appended to its list of the names and numbers of the prevailing maladies the following paragraphs: "The summer months have been unusually wet and cool. A few warm days occurred in the third week of June, in the second week of July, and about the end of August; but the remaining portions of those months were cool, often very chill, with almost daily rains, accompanied with thunder and lightning." *Absit omen!* "On the whole, however," the report continues, "a damp and cool summer is favourable to the health of the inhabitants of London, and accordingly the number of applicants to the dispensary has been smaller than is usual at the summer season." This reflection must have seemed cold comfort to the Londoners of a hundred years ago, who doubtless were willing to suffer a little in order to have fine weather.

Medical News.

THE first Greek Congress on Tuberculosis has recently been held under the patronage of the Crown Prince of Greece.

IN accordance with the policy settled last year, the London Education Committee intends shortly to appoint twenty-six additional assistant school medical officers.

THE Lord Chancellor has added the name of Dr. T. W. Clay, of Holyhead, to the Commission of the Peace for the county of Anglesey, on the recommendation of Sir Richard Williams Bulkeley, Bart., Lord-Lieutenant for the county.

AT a Chapter-General of the Order of the Hospital of St. John of Jerusalem in England on May 25th, Major J. Robertson Reid, M.D., R.A.M.C.(T.), Birkdale, was selected an Honorary Associate, in recognition of services rendered in connexion with ambulance work.

THE annual exhibition at University College of Egyptian antiquities found by Professor Flinders Petrie and students at Memphis (Palace of Apries) and Thebes will be open from 10 till 5 from July 5 to July 31st, and on the evenings of July 5th and July 15th from 7 till 9.

THE annual luncheon of the Continental Anglo-American Medical Society will be held on Thursday, July 29th, at Belfast, during the annual meeting of the British Medical Association. Members intending to be present should communicate with Dr. C. G. Jarvis, the Hon. Secretary, 81, Boulevard Malesherbes, Paris.

A COURSE of twelve lectures on tuberculosis of the bones and joints will be given at the Maritime Hospital, Berck-sur-Mer, Pas-de-Calais, near Boulogne, by Dr. Menard, chief surgeon, and Drs. Andrien and Calvé, assistant surgeons. The lectures, which will be illustrated by cases, specimens, and casts, will be delivered from August 2nd to August 13th. The fee for the course is Fr.50. Further information as to hotels, etc., can be obtained from the Agence Laffilé et Gerardin, Berck-sur-Mer.

A SERIES of post-graduate lectures will be given at the London School of Dental Surgery connected with the Royal Dental Hospital, Leicester Square, during October and November. The lectures will deal with pathogenic organisms of the mouth, periodontal disease, stagnation and drainage, vaccine treatment, radiographs, and pathological conditions of the third molar. Past and present students of the hospital and internal students of the University of London will be admitted free; the fee to others will be 2 guineas. Further particulars can be obtained on application to the Dean.

THE twelfth annual dinner of the West London Hospital and Post-Graduate College took place at the Trocadero on June 16th, the company numbering over 150 persons. Dr. Phineas Abraham presided, and the guests included Surgeon-General A. M. Branfoot, I.M.S., and Fleet Surgeon C. E. Stalkartt, who replied to the toast to the Imperial Forces; Sir Havelock Charles and Dr. C. O. Hawthorne, who responded to the toast to "The Guests and Kindred Colleges." In the course of the evening it was mentioned by Mr. Bidwell that the entry of post-graduate students last year reached a total of 232, and that since the establishment of the college in 1896, over 1,700 medical men, largely consisting of officers of the Royal Navy and the Indian Medical Service, had enjoyed its benefits.

THE West Kent Medico-Chirurgical Society, now in the fifty-fourth year of its existence, gave its annual dinner on June 18th. The president of the society, Mr. Septimus Barnett of Lewisham, was in the chair, and the company included a very large number of guests. Among the latter was the Rev. E. Grundy, who drew an analogy between sacerdotal and medical general practitioners which was interesting and humorous in its completeness. The difficulties with which they had to contend and the pitfalls which awaited them were of a corresponding kind; they gained an equally wide acquaintance with the best and the worst sides of human nature, and the qualities which were required to make a successful general practitioner served also to promote the success of the parish priest. In the course of the evening the view was expressed that the time had come when, for its own protection and for the eventual benefit of the public, the medical profession should enter into close defensive union. As an instance of the arbitrary fashion in which its individual members are liable to be treated, a mandate recently issued by the Postmaster-General was quoted. It renders a postal medical officer liable to have thrust upon him at any time the care of a patient whom he has not contracted to attend, but whom, nevertheless, he is practically obliged to treat at a rate which in many instances may work out at an absolute loss.

THE late Dr. Hall, of St John's Wood, and formerly of Crouch End Hill, left estate of the net value of £87,679. We are informed that Dr. Hall was unmarried, and that a wealthy patient left him a large sum of money. Dr. Hall, who was a graduate of the University of Glasgow, after legacies to a number of charities, including Epsom College, the British Medical Benevolent Fund, the National Hospital for the Paralysed and Epileptic, Queen Square, and the Royal London Ophthalmic Hospital, and one of £1,000 to the Research Defence Society, bequeathed the balance to the University of Glasgow for the foundation of tutorial fellowships. An account of these is given elsewhere.

THE annual meeting of the Poor Law Medical Officers' Association will take place on Tuesday, July 6th, at the Guildhall, London, when a conference of the Poor Law medical officers of England and Wales, to consider the recommendations of the Royal Commission on Poor Law Medical Relief, which will be opened by the Right Hon. the Lord Mayor in the Council Chamber, at 11 a.m. Papers will be read on district medical officers and the report of the Royal Commission, by Dr. Major Greenwood, D.P.H., LL.B.; on medical relief and public assistance, by Mr. C. S. Loch, Secretary of the London Charity Organization Society; on the place of the district medical officer in a unified county medical service, by Mrs. Sidney Webb; on the genesis of the Poor Law infirmary, by Dr. F. S. Toogood, Medical Superintendent, Lewisham Infirmary; and on the public health aspect of the report of the Royal Commission, by Dr. G. F. McCleary, M.O.H., Hampstead. The papers will be followed by discussions, and the special business of the association will be conducted at 2 p.m., after which any matters postponed from the morning will be continued. The annual dinner will be held at the Waldorf Hotel, Aldwych, London, at 7.30 p.m. the same evening, Surgeon-General Evatt, C.B., the President of the association, being in the chair. The price of the tickets is 7s. 6d., not including wine. Any Poor Law medical officer wishing to be present is requested to communicate with the Honorary Secretary, Dr. Major Greenwood, 243, Hackney Road, N.E. Ladies are admissible among the guests. The Lord Mayor and Lady Mayoress have kindly invited Poor Law medical officers attending the conference to afternoon tea at the Mansion House between 3.30 and 6 p.m.; the invitation includes ladies.

AT the last meeting of the Socialist Medical League, Dr. Salter, L.C.C., chairman, said that the medical profession, along with every section of society, was moving in the direction of collectivism; the special knowledge and training of the medical profession could be enlisted to shape the movement on scientific lines. In Japan the manufacture and supply of drugs for medical purposes had been undertaken by the State, and a Government Commission was sitting at the present time in Tokio to discuss the advisability of the medical profession being nationalized. The main factor had been the extraordinary anomaly that while the fever raged the doctor flourished, but when the country had a clean bill of health the doctor starved. Dr. Robb of Bourneville said that the private practitioner was between the upper and nether millstones of the club and the dispensary and hospital. He was not paid to prevent disease. Whilst preventive medicine under State control had markedly advanced, it was only by a complete development of the national system that the ideal could be attained. By the nationalization of the medical profession hospital abuse would cease. State insurance would include medical aid, for only thus could the national funds be adequately protected both from the effects of disease and from the wiles of the malingerer. Dr. McVail in his report to the Royal Commission on the Poor Law had maintained that free access to and the acceptance of medical advice on the part of the general community would result in great improvement in the average physical health and great diminution in the prevalence of disease. Dr. Burton said that nationalization would be brought about not by medical men, but by the people through an economic revolution. Dr. Rose said that the teacher of the future would be the medical man. Nine millions a year were being spent in providing for old people who were of no use to the State, yet there was hesitation to spend even one million on the children, who were the chief assets of the country. Surgeon-General Evatt said that every army medical officer was a sanitary officer, and better treatment had produced better men. If every medical man in the country was a sanitary officer, paid to prevent disease, the slums and all their attendant evils would be got rid of. The discussion was continued by Drs. Clarke, Bruce, Appel, and others.

British Medical Journal.

SATURDAY, JUNE 26th, 1909.

PNEUMOCOCCUS INVASION OF THE THROAT.

Medical science can point with justifiable pride to the almost complete extinction of some diseases, notably typhus, and to the great diminution in the prevalence of others, such as small-pox, tuberculosis, and typhoid fever, which are among the results achieved by it during the last half-century. But, like the voice behind the hero of a Roman triumph telling him that he was mortal, there is one disease that whispers a like chastening reminder in the ear of victorious hygiene. Professor Osler says that "among "the maladies of modern life, pneumococcic infections "alone have increased in frequency and severity." The pneumococcus, though it has not yet got the ill name among the public which it deserves, works an infinity of mischief in addition to the inflammation of the lungs with which its name is mainly associated. It is carried about from one part of the body to another by the blood and lymph channels. Not to speak of the pleura, it invades the heart, the meninges, the brain, the peritoneum, the joints, the kidney, the bones, and the ear, causing in these various parts secondary, and sometimes primary, inflammations. It has been found in the fetal blood and in the uterine sinuses in pregnant women suffering from pneumonia. It lurks in the throat, waiting for the opportunity offered by exposure to cold or other influence lessening the power of resistance. The wonder is that it should not oftener find a point of attack in the upper air passages. It is not improbable that it may be accountable for septic conditions of the throat which are attributed to more familiar agencies.

That the pneumococcus does sometimes find a weak spot in the throat, with the result that infective pharyngitis is produced, is shown by two remarkable papers published in the present issue of the Journal. Some cases of pneumococcal pharyngitis were reported many years ago by French observers, references to whose papers will be found at the end of Dr. Elliott's paper, which appears at p. 1528. There also will be found a reference to a case recorded by Monro in the *Glasgow Medical Journal* of 1901. It was Sir Felix Semon, however, who, as far as we are aware, first dealt fully with the subject. His recognition of the importance of a previously almost unknown definite sequence of phenomena is equivalent to the discovery of a new disease. It is not to the man who first happens to notice a fact, but to him who, understanding its significance, calls attention to it and succeeds in getting it generally admitted, that the credit of a discovery properly belongs. In a lecture delivered at the Polyclinic in November, 1908, and published in the *Medical Magazine* for December of the same year, Sir Felix Semon reported two cases of affection of the throat characterized by a course entirely different from any known to him in other diseases of that part. They showed, to use his own words, "the most curious oscillations between "intensely painful inflammatory conditions of the "throat and improvements which appeared to render "complete and speedy recovery almost a certainty, "but which repeatedly gave way to absolutely unex-"pected aggravations until finally—in the one case "certainly spontaneously, in the other during an "iodide of potassium treatment—complete recovery "took place." These cases, says Sir Felix Semon, were characterized by "profound asthenia, almost "entirely afebrile course, and complete absence of "swelling of the cervical lymphatic glands." In one case the pneumococcus was present almost in pure cultures, and in the other the cultures consisted mostly of pneumoccccus; in both cases towards the end perforation of the palate occurred. The facts seemed to Sir Felix Semon to warrant a suspicion that the morbid process was of the nature of chronic sepsis due to invasion of the pneumococcus.

In the paper by him which we publish this week he records in detail another case, in which pneumococcus invasion of the throat was combined with tuberculosis. It is remarkable that while the pneumococcus attacked the pharynx, the tubercle bacillus at first confined its depredations to the larynx. Later the two parasites joined forces, as it were, and were found mingled together on the pharynx, the posterior part of the tongue, and the epiglottis. The case in some of its clinical features simulated tuberculosis, but the pneumococcal origin of the pharyngeal lesions was conclusively proved by bacteriological methods. The tuberculous infection supervened on the pneumococcal invasion.

Some other interesting cases of pneumococcus infection of the pharynx are reported at page 1528 by Dr. John Elliott, of Chester. These cases differed from those recorded by Sir Felix Semon in the suddenness of their onset and the acuteness of their course; the fever usually lasted no more than forty-eight hours. In one case there were aural complications, which were also clearly traced to the action of the pneumococcus. It is noteworthy that pneumonia was very prevalent in the neighbourhood at the time, but there was no influenza. Although there was considerable swelling of the lymphatic glands under the jaw and the neck, the pharyngeal lesion was much less severe and ran a much shorter course than those in the cases reported by Sir Felix Semon.

With regard to the treatment, there is little to be said. In a paper published at p. 1530, Dr. Butler Harris discusses the therapeutic value of the pneumococcus vaccine in pneumonia. He brings forward evidence to show that successful inoculation for pneumonia is possible, and that in any case the treatment does no harm. He recommends that a vaccine from one or a number of virulent strains should be used, and that it should be introduced as early as possible. His conclusion is that infections of the lung by the pneumococcus which fail to resolve after an acute pneumonia, as well as pneumococcic infections of other areas, should be treated with a pneumococcic vaccine, and he believes that the treatment in such cases affords a reasonable prospect of success. It should be pointed out, however, that in two of Sir Felix Semon's cases the use of a pneumococcus vaccine proved useless; in one case the patient, himself a medical man, thought it did him harm. The number of cases is evidently much too small to form a solid foundation for any conclusion as to the value of the treatment.

The papers open a new field of observation, but much spade work is still needed before definitive conclusions can be reached. Nevertheless, the thanks of the profession are due to the pioneers. The affections described by Sir Felix Semon and Dr. Elliott seem to have little in common beyond the presence of the pneumococcus. The severe form so vividly described by the distinguished laryngologist may not, as he himself suggests, be exceedingly rare; but we think it likely that the more acute affection described by Dr. Elliott is more frequent. We recommend our readers to study the papers for themselves and carefully to compare the clinical and pathological features of the affections there described and the differences in course and in the character of the lesions which they present. Now that attention has been so strongly called to the fact that the pneumococcus may invade the throat, practitioners will doubtless be on the watch, and will recognize it when it comes under their notice.

TOXAEMIC INFANTILISM.

CASES of intractable wasting and ill-development without obvious cause are frequent enough in infants. In older children cases in which there is a striking retardation in the growth of the body, implicating the skeleton, the muscles, and most of the organs, whilst there is a relatively fair development of the brain, are occasionally met with, but have received little attention. With the assistance of Dr. Emmett Holt, Professor Herter of Columbia University has studied five fully-developed and typical examples of this condition, and five others of shorter duration and subacute course. His observations were carried out for several years, and he has embodied his careful researches in a monograph of extreme interest and value.[1] It not only throws light on these cases of so-called "infantilism," but helps, perhaps, in the investigation of other conditions of ill-development in infants and older children.

Cases of infantilism usually first come under observation at ages varying from 4 to 6 years, and, according to Herter, the chief or essential features of the complaint are: An arrest in the development of the body; the maintenance of mental powers and fair development of the brain; marked abdominal distension; moderate degrees of anaemia; rapid onset of physical and mental fatigue; and various obtrusive irregularities referable to the intestinal tract. Of these signs the most striking is the arrest in development in regard to both bodily stature and weight. Thus, in one patient, at the age of 7 years the height was only 36 in. and the weight 25 lb. Another weighed only 29 lb. at the age of 9 years. Both weight and development may remain almost stationary for long periods of time, in spite of the utmost care to ensure dietetic conditions favourable to growth. In several instances it was noted that a slight tendency to increase of weight during the winter months was counterbalanced by a loss during the ensuing summer. These losses of weight were always attributable to intestinal disturbances—usually a moderate degree of diarrhoea. Any loss of weight incurred, too, was very slowly recovered from.

Of the other special features of infantilism, disturbance of the intestinal functions is the most striking and characteristic. Diarrhoea was a prominent feature in all of Herter's cases. Pronounced watery diarrhoeal attacks, however, were comparatively rare. Much more frequently the intestinal disturbance was manifested by the appearance of soft stools containing an abundance of neutral fat, soap, and fatty acid crystals. In the absence of diarrhoea the stools are apt to be voluminous, light coloured, floating on water, sour-smelling in spite of the faecal odour due to the presence of indol, and mingled with large masses of mucus. Herter carefully investigated both the bacterial flora and the chemical constituents of the stools. The most interesting result of the bacterial examinations was the discovery by Kendall of large colonies of Gram-positive organisms for which the name *Bacillus infantilis* is proposed. This organism, or rather type of organism, is, it would appear, normally present in the faeces of infants, whether suckled or hand-fed, but is ordinarily absent in the motions of children of older age. It is found associated with other Gram-positive organisms, the *Bacillus bifidus* of Tissier and the *Bacillus acidophilus* of Moro. For a detailed description of this *Bacillus infantilis*, with the means of its detection and cultivation, reference must be made to Herter's work. If further observations should confirm the author's conclusion that in the height and relapses of the complaint these Gram-positive micro-organisms almost entirely replace the *Bacillus coli* and the *Bacillus lactis aërogenes* in the faecal flora, the reverse being the case at stages of improvement, a clinical fact would be established that might prove of far-reaching interest and importance. The appearance and constituents of the stools have been sufficiently indicated for our purpose. It only remains to add that any undue increase of carbohydrates in the food leads to frothing, and increased frequency of the motions. An analysis of the amounts of calcium and magnesium in the food, and of those in the urine and faeces, showed that the output of these two salts was equal to the intake, with a remarkable degree of accuracy.

The urine was examined with the same care as the faeces. As a rule, the volume passed was excessive—800 c.cm. to 1,000 c.cm. in the course of the day. The most important features discovered on chemical analysis were a rise in the ethereal sulphates, the occurrence of an excess of phenol in the distillate, the presence of aromatic oxyacids, and a marked degree of indolaceturia in several cases. Each of these is held to be indicative of absorption of the products, and a putrefactive decomposition of the intestinal contents. Herter also found that the urinary evidence of intestinal putrefactive decomposition was greatest at the times when the Gram-positive organisms were the dominant ones in the faecal flora.

In the pathology of intestinal infantilism Herter considers that two leading features call for explanation—the retardation of growth and the chronic intoxication. According to him, "the retardation in "growth can apparently be explained on the basis of "the imperfect absorption of nutritive material, "which can be demonstrated in these cases. This "impaired absorption of foodstuffs is probably to be "ascribed to a chronic inflammation located in the "ileum and colon and associated with the presence of "abnormal forms of bacteria. The intoxication, "which is so prominent a feature of intestinal in-"fantilism at its height, may confidently be ascribed "to the action of putrefactive products of intestinal "origin upon the central nervous system and

[1] *On Infantilism from Chronic Intestinal Infection.* By C. A. Herter, Professor of Pharmacology and Therapeutics, Columbia University. New York and London: The Macmillan Company. 1908. (Post 8vo, pp. 118. 4s.)

"muscles. The exact relation of the abnormal "bacterial flora to the pathological conditions in the "intestines is not yet clear. The chief evidence in "favour of the causal relationship between the "phenomena of infantilism and the overgrowth and "persistence of flora of the nursling period, especially "*B. bifidus*, is found in the changes that occur during "convalescence when these organisms are replaced by "those of the type appropriate to childhood. A "further evidence in the same direction is seen in the "great increase in the infantile types of bacteria "during periods of relapse. There is no evidence at "present that intestinal infantilism has any other "origin than a purely intestinal one."

The prognosis in these cases is doubtful; many die from exhaustion, or from some intercurrent malady. Where the complaint has been of any severity, recovery is associated with permanent dwarfism, which may be very marked.

For such patients an equable temperate climate is desirable, as their body temperature is unstable, they readily lose heat, and any rapid changes of weather are likely to give rise to digestive disturbance. The main lines of treatment are, however, dietetic; a first essential being the reduction of carbohydrates and fats to digestible limits. When this has been attained, any increase of either of these two classes of substance should be made with extreme caution. As a proteid element in the food, Herter stongly advocates gelatine. As it contains neither a tryptophan nor tyrosin nucleus, he claims that its digestion in the intestine cannot give rise to indol, skatol, indolacetic acid, or any of the other substances responsible for the chronic intoxication in the child. Another reason for its administration is that the *B. bifidus* and the *B. infantilis* are practically uncultivable on gelatine media. It may well be, then, that gelatine may inhibit the growth of these organisms in the intestinal canal. The amount of gelatine recommended is 1 oz. in divided doses for a child of 7 or 8 in the course of twenty-four hours. In addition to other properties, it is claimed that this amount of gelatine would contribute 125 calories towards the maintenance of bodily temperature.

The recommendation of gelatine is of interest for other reasons: it was once held in high esteem in invalid cookery, but for many years past its nutritive value has been reckoned as little or nothing. At one time, again, it was a favourite addition to cow's milk for infantile use on account of its separating the particles of casein. Nowadays, however, it would appear to have been entirely superseded for this purpose by barley water and other substances. In the light of Herter's investigations it may be that gelatine had more valuable properties than that of merely separating the particles of casein when administered in milk to wasting babies, and that its supersession has been a mistake.

THE STATISTICS OF OPSONINS.

SINCE the introduction by Sir A. E. Wright of a method of testing the response of the body to infection and immunization by the fluctuations of the opsonic index numerous articles have appeared, in which the accuracy of the method as commonly employed has been called in question.

These protests have come from two quarters. The one party has urged that the technique of the method is subject to so high an error that reliable deductions cannot be drawn from the indices—that, in fact, many of the minute variations recorded as significant by the whole-hearted opsonist come within the experimental error of the method. The other party (much the smaller number) contends that if the opsonic antibody is an amboceptor which co-operates with complement, the current method of estimating the amount of that antibody in a serum is not valid.

Until recently, however, no serious attempt had been made to test the validity of the opsonic method as at present practised by rigid mathematical analysis. This lacuna has now been filled by Drs. Greenwood and White in their recent contribution to *Biometrika*.[1] The authors set out from the consideration that the constants (mean, mode, etc.) cannot be deduced from a certain distribution unless the form and extent of that distribution be known. In the opsonic technique a varying number of leucocytes containing a varying number of micro-organisms are observed and recorded, and an average value is deduced by dividing the total number of micro-organisms taken up by the total number of leucocytes counted. In comparing one serum with another, therefore, the means are taken as the most probable values resulting from the distributions. Obviously the mean would be appropriate only if the distribution followed the normal or Gaussian curve of error (a symmetrical curve). Greenwood and White, therefore, in this first memoir proceed to determine the nature of the frequency curve formed by plotting the number of micro-organisms per cell against the frequency of that cell. A few preliminary analyses were made with material obtained at the London Hospital. A series of counts of 75 cells was compared with control counts made on the same day, and with the same emulsion. The difference between the mean of each count and that of the control was estimated along with its probable error on the assumption that the distributions followed the normal or Gaussian curve. Taking the usual statistical criterion for significance they found that values below 0.8 and above 1.2 were certainly significant, but the figures when plotted out or even casually examined showed a markedly skew arrangement, thus foreshadowing the results of their analysis of a far more extensive mass of material. This latter was prepared by the best technique available, and was placed at the disposal of the authors by Dr. Strangeways of Cambridge and Dr. Fleming of St. Mary's Hospital. Dr. Strangeways supplied eight sets of 1,000-cell counts and one count of 2,000 cells, while Dr. Fleming supplied six counts, the number of cells in each varying from 400 to 1,100. Each of these distributions was now analysed, and the mathematical criteria necessary for the application of one or other of Pearson's frequency curves worked out. It may be mentioned that these curves introduced into statistical work by Professor Karl Pearson are of a very general type, and include the normal or Gaussian curve of error merely as a particular case.

The arithmetical labour entailed in an investigation of this kind is enormous. Suffice it to say that the authors have worked out the equations of the curves which fit most closely all the various distributions.

These curves are without exception of markedly skew type, rising fairly rapidly to a maximum point, passing through a point of inflexion and then declining very gradually to the base line. Pearson's Type I can be

[1] A Biometric Study of Phagocytosis, with Special Reference to the Opsonic Index. First memoir: On the frequency distributions of phagocytic counts. *Biometrika*, Vol. vi, No. 4, March, 1909.

fitted to ten of the curves, while the remaining four are satisfied more closely by Type V. To none of the distributions can the normal or symmetrical curve of error (in which the mean coincides with the mode and divides the curve into two exactly similar parts) be fitted. The skewness was markedly less in Fleming's curves than in those of Strangeways, and the question arose whether this reduction in skewness could be accounted for by the somewhat thicker emulsions with which Dr. Fleming purposely worked, and the correspondingly higher values which he obtained for the modes. Though this circumstance would partly account for the reduced skewness, the authors conclude from the result of a rather intricate method of analysis, which cannot be illustrated here, that Strangeways's counts were more truly random samples of the whole population of leucocytes than those of Fleming, and consequently afforded a more reliable guide to the whole distribution.

The main conclusion which arises from this elaborate paper is, that the normal curve of error does not apply to phagocytic distributions, and consequently that the mode (that is, the number associated with the greatest frequency of cell) would be a more reliable measure of the whole distribution than the mean. The authors reserve for a further memoir the analysis of the frequency curve formed by the means of equal samples taken from a large population of leucocytes Naturally for adequate statistical treatment of this question a large number of cells would be required (perhaps 15,000), but the authors have performed a preliminary analysis with a count of 2,000 cells made by Dr. Strangeways, who grouped his results in 80 batches of 25. The curve of means (of 25 cells), though admittedly based on a paucity of data, was also found to be of skew type (Pearson's Type I), and accordingly the calculation of probable errors on the basis of the normal curve of error would be quite inappropriate.

We cannot too strongly praise the valuable statistical investigations which Dr. Greenwood and Dr. White have carried out on what might be called the quantitative side of immunity work. It marks a distinct forward step, and similar methods might with advantage be employed in other questions affecting immunity. To the critic who asserts that opsonic data are not suitable for such statistical treatment there can be but one reply—namely, that the best technical skill has been employed in the preparation of the material used by the authors in their work. Of the validity of their analyses from a purely mathematical point of view there can be no question. They have shown that phagocytic distributions resulting from the ordinary opsonic technique are markedly skew. This is certainly a result of immense importance, but one would wish to know whether the form of the phagocytic distribution is entirely independent of the method by which the amount of opsonic antibody in a serum is estimated. One point, for instance, which we hope the authors will attempt to investigate, is the estimation of the probable effect on the frequency curve of other methods of testing quantitatively the amount of opsonin. The employment of heated serum, or inactivated and complemented immune serums, might conceivably lead to some modification in the amount of skewness of the requency curves.

In the meantime, the authors are heartily to be congratulated on the result of their work, and their future contributions to the statistical side of the opsonic question will be awaited with interest.

DEATH OF PROFESSOR D. J. CUNNINGHAM.

WE have to announce with the most profound regret, a regret which will be shared by countless friends and old pupils all over the world, the death on Wednesday last, June 23rd, of Professor D. J. Cunningham, of Edinburgh. Some months ago he went to Egypt in the hope that a change to that kindly climate, along with absolute rest, would bring about a renewed vigour. The hope was not realized, and on his return home it was found that there were signs of more serious and deep-seated disease, and for the past few weeks it has been recognized by his friends that recovery could not be expected. Professor Cunningham, who was an Edinburgh student, was Demonstrator of Anatomy in the University from 1876 until 1882, when he was appointed Professor of Anatomy in the School of the Royal College of Surgeons in Ireland. In the following year he became Professor of Anatomy in the University of Dublin, an office which he only resigned in 1903 to succeed his old master, Sir William Turner, in the Chair of Anatomy in Edinburgh. Of all that Professor Cunningham did in and for Dublin and Edinburgh it is too soon to speak; it was a fine career, nobly lived in a spirit of true and chivalrous devotion to science, to the profession he adorned, and to the public weal.

THE REFORM OF THE POOR LAWS.

THE Council of the British Medical Association, at its last meeting, decided that a special Poor Law Reform Committee should be appointed to consider the reports of the Royal Commission on the Poor Laws as affecting the medical profession, and to make recommendations as to any action which should be taken by the Association. It was further decided that, for the consideration of questions affecting England and Wales, the committee should be constituted of five members nominated by the Medico-Political Committee, three by the Public Health Committee, and two by the Hospitals Committee, and this committee met last week. At the same time the Scottish Committee and the Irish Committee were each requested to consider questions specially affecting Scotland and Ireland, and to nominate two members each to the special Poor Law Reform Committee for the consideration of questions affecting the United Kingdom as a whole. As our readers are aware, the Report proper[1] is a folio volume of 1252 pages, consisting of a Majority Report filling 670 pages; memoranda and notes by individual members of the Commission, filling 48 pages, and a separate or Minority Report which contains 518 pages. In addition there has been issued the report by Dr. J. C. McVail[2] of an inquiry undertaken by him at th request of the Royal Commission as to the methods and results of the present system of administering indoor and outdoor medical relief, founded upon careful examination of the administration in certain selected unions; this report forms a volume of 338 pages. In May was issued the report on Ireland.[3] That volume contained a statement to the effect that the complete publications of the Commission would extend to at least thirty-one volumes; it is obvious that the consideration of such a mass of material, even if for the moment we confine attention to the Majority and Minority Reports and that on England and Wales by Dr. McVail, will demand prolonged study, more especially as all the three reports contemplate a profound modification of the present system of giving relief in poverty and sickness and the co-ordination and extension of the machinery

[1] BRITISH MEDICAL JOURNAL, February 20th, p. 479, and February 27th, p. 545.
[2] Ibid., April 3rd, p. 855.
[3] Ibid., May 8th, p. 1129.

for the prevention of poverty. It is hardly to be expected that the special Poor Law Reform Committee will be able to present a report containing considered recommendations in time for its discussion at the Annual Representative Meeting next month, and the subject is of such great importance and so extremely complicated that it would obviously be unwise for the Association to commit itself to any settled line of policy until the problem has been fully reviewed in all its aspects. It is not the interests of Poor Law medical officers alone that are concerned, but the whole future of the medical profession in this country is involved, as Dr. Ford Anderson points out in the address published this week (Supplement, p. 408), which we may commend to those who have not yet commenced the study of the subject as a very excellent brief introduction to it. As he recognizes it is very desirable that the opinion of Poor Law medical officers should be ascertained at an early stage, and we may direct attention to the particulars given elsewhere of a conference of Poor Law medical officers to be held at the Guildhall, London, on July 6th, under the auspices of the Poor Law Medical Officers' Association of England and Wales to consider the report of the Royal Commission with regard to Poor Law medical relief. It is estimated that there are in the Poor Law medical service of this country between three and four thousand medical practitioners, and their status must be considerably affected by the carrying out of the proposals of either the majority or the minority of the Royal Commission; both parties in the Commission are to be represented at the conference, for Mr. Loch, who signed the Majority Report, and Mrs. Sidney Webb, who signed the Minority Report, are both to read papers.

THE STUDY OF MAN.

From statements published in sundry newspapers, it would appear that the larger municipalities in this country have all recently received from Mr. Arthur MacDonald, of Washington, a memorandum urging the establishment of municipal departments for the study of the criminal, pauper, and defective classes. The idea is not likely to be acted upon for the present, at any rate, as the anthropological energies of local authorities are fully absorbed by the study of children as represented by the scholars in elementary schools, but the circular lends interest to a pamphlet by the same gentleman, which has recently reached our hands. It bears the attractive title, *A Plan for the Study of Man*, and consists of 162 closely-printed pages. As far as we have been able to ascertain, it discloses no definite scheme of any sort for studying man, but, on the other hand, contains an infinity of disconnected paragraphs and quotations from other of the author's very numerous publications, and some records of examinations of adults and children. The latter lose most or all of their value, because the fashion in which they were collected is imperfectly stated. The short paragraphs are perhaps intended to direct attention to points to be studied at a laboratory of the kind advocated, and deal in a couple of hundred words or so with such subjects as defects of sight and hearing, dangers at the age of puberty, and measurements of the head. Many of the statements made are decidedly remarkable. Thus the reader, after being informed that the criminal classes contain an unusual proportion of left-handed people, is told that the finger muscles of the pickpocket are sometimes cut so that he can apply either hand with greater dexterity. A similarly valuable piece of information is that at puberty the arteries increase in length, but little in diameter, so more work is then thrown on the heart, and if growth is hindered there is danger of the early development of consumption. More space is devoted to hypnotism than to any other subject. The author appears to have visited hypnotic clinics in various countries, and has been so much impressed thereby that apparently he would desire to see hypnotism adopted as one of the ordinary methods of dealing with unruly children in schools. Finally, it may be noted that the author indicates a belief that students of psychophysics should have a preliminary scientific training of the kind undergone by medical men, and, after reading his book, one is fully disposed to hold the same view.

MAY MARRIAGES.

How comes it that May has got the reputation of being an unlucky month for marriages? We all know that "in the Spring the young man's fancy lightly turns to "thoughts of love," and the natural inference would seem to be that he would be eager to translate his thoughts into action. Vegetation begins to revive in May, and the birds sing their love songs on every spray. Yet how strong is the superstition as to the unluckiness of May marriages is shown by the fact pointed out by Sir Samuel Wilks in the *Hampstead and Highgate Express*, that whereas at the end of April a column and a half of the *Times* was occupied by announcements of weddings, with the beginning of May the list fell almost to nothing, becoming longer again in June. The superstition is older than Christianity, for it is mentioned by Ovid, who says in his *Fasti* that May was the month of the Lemuralia, or the Lemurian festivals. "These," to quote Sir Samuel Wilks, "were "instituted by Romulus in honour of his brother "Remus, who died in this month, and were called the "Remuria. Afterwards, the letters being changed, "which was a common thing amongst the Romans, "they were called the Lemuria. The Lemures were "the 'manes' of the dead, which wandered about as "ghosts over the world, terrifying the good people and "haunting the wicked. The Romans had the super-"stition to celebrate festivals in their honour in the "month of May. The solemnities continued three "nights, during which time the temples of the gods "were shut and marriages prohibited. The people "performed many curious ceremonies to drive the "ghosts away." The following are the words of the poet in his *Fasti*, the subject of which is the feasts of Rome:

Mox etiam Lemures animas dixere silentum;
Hic sensus verbi, vis ea vocis erat.
Fana tamen veteres illis clausere diebus,
Ut nunc ferali tempore operta vides.
Nec viduae taedis eadem, nec virginis apta
Tempora; quae nupsit, non diuturna fuit.
Hac quoque de causa, si te proverbia tangunt,
Mense malum Maio nubere vulgus ait.

Sir Samuel Wilks says that in one edition of the *Fasti* the text gives "malas" instead of "malum," which would mean that "they are bad wives who marry in May." For our own part, we should say that May marriages are most likely to be unlucky when that month of love and mellow fruitfulness weds with sapless and barren December.

HERMAPHRODITISM.

Much has been written recently in French medical serials about hernia of the uterus, hermaphroditic conditions associated with that form of rupture, and hermaphroditism independent of uterine hernia. Cranwell's monograph is a standard work on uterine hernia, and Cornil and Bressard, and in Germany Arnolds, have also published cases with comments on androgyny, and some notice of these contributions to medical literature has already appeared in the

JOURNAL. Bégouin of Bordeaux has recently published a report of a very doubtful case.[1] He observes that in about 96 per cent. of all instances of pseudo-hermaphroditism it is a male that is taken for a female on account of a perineo-scrotal hypospadias, yet he considers that the subject about whom he writes, brought up as a boy, was really a girl. A child aged 7 was brought to Bégouin in the spring of 1904 on account of an abdominal tumour which had been observed for six months. The child had grown rapidly during the past year; the penis was large, but the mammae had also developed, and had attained the size normally observed in a girl of about 13 years of age. There was much hair on the pubes, hypospadias was detected, and while the left side of the scrotum was empty, there was a right scrotal hernia including a body which felt like a testis. A solid tumour occupied the hypogastrium, rising above the umbilicus; it lay more to the left than to the right of the middle line. This movable hard tumour, as big as a fetal head, felt like a fibroma of the ovary, or a pedunculated uterine fibro-myoma, and Bégouin states that had he known the true sex of the patient as was afterwards revealed he would have diagnosed accordingly. He believed that the child was a boy, and therefore suspected that the tumour was a fibroma of the mesentery, a subject on which he is known to be an expert.[2] He opened the abdominal cavity and discovered that the tumour was a fibro-myxosarcoma of the left ovary, connected by perfectly normal relations with the uterus; the left round ligament and Fallopian tube ran over its anterior aspect, and the left broad ligament was not opened up. The cervix of the uterus was reduced to a thin fibrous band, which was divided together with the broad ligament, and then the tumour came away. No ovary, Fallopian tube, or broad ligament could be found in the right side of the pelvic cavity, but when Bégouin proceeded to obliterate the inguino-scrotal hernia on the right side he found that the right Fallopian tube lay in its sac, connected with the body that Bégouin had taken on palpation to be a testis, but which was found to have all the appearances of an ovary. He reduced the right tube and ovary, not wishing to risk occurrence of the symptoms which frequently follow removal of both genital glands. The external parts were carefully examined after the patient's convalescence, and then it was seen that the scrotum ran forwards, passing over the front of the root of the short though well-developed penis-like body which Bégouin considers to be a clitoris, the more so because the urethra did not run along under its lower border as in hypospadias in the male, but passed upwards straight into the bladder, just as in the normal female. There was not even a lemuroid clitoris traversed by the urethra. Bégouin saw and examined his patient last November, four and a half years after the operation. He admits that the child looked like a boy. Bégouin calls "him" *il* more than once in this second report, and notes that the mammae were much less developed than in 1904. "He" stood 4 ft. 10½ in. in "his" stockings and was very muscular. "He" is now at the top of "his" class in a boys' school and excels in active sports; "his" parents have decided to let nothing be known about "his" condition, and to take no steps to alter "his" *état civil*, so that the "girl" will probably have to serve "his" term in the army. With all respect to Bégouin, we must add, in conclusion, that many authorities will hardly be convinced that this subject is a female. The left "ovary," converted into a large tumour, contained no ovarian elements; this is purely negative evidence, as the same may be the case in double solid ovarian tumours of the ovaries. But the right "ovary" was not removed, so that we cannot feel sure that it was an ovary at all. A rudimentary Fallopian tube, and even a uterine cornu have been found connected with a true testis. In a doubtful case the microscope alone can decide what is the true nature of the genital gland.

[1] Pseudo-hermaphrodisme masculin externe coïncidant avec un sarcome de l'ovaire, *Revue de gynéc. et de chir. abdom.*, March-April, 1909, p. 179.

[2] Traitement des tumeurs solides et liquides du mésentère *Revue de chirurgie*, vols. xviii (1898), and xix (1899).

ATTEMPTS TO REDUCE VACCINATION FEES.

A VACANCY occurred recently in the office of public vaccinator for one of the districts of Newcastle, and in deference, it would appear, to the wishes of the local ratepayers' association a proposal was made to reduce the fee to 2s. 6d., and was only rejected on a close division. A similar proposal was made a few years ago, and then also was defeated only by a narrow majority. The ratepayers' association has not acknowledged either defeat, and at the meeting of the board of guardians at which the appointment was to be made the other day, a deputation from the ratepayers' association attended and represented the views of that body. The chairman informed the deputation that it was too late as the board had already decided that the fee should be 4s. 6d.; nine candidates had sent in their names, and of these eight attended and were interviewed by the board; each was asked whether he would take the appointment at a lower figure, and the reply was to the effect that the candidate was resolved to be guided by the views of the British Medical Association. The Division, as may have been observed by attentive readers of the JOURNAL, had already taken action in the matter, and had recommended that the reduction of the fees ought not to be accepted. The candidates have loyally abided by this opinion, and Dr. Hindhaugh was appointed at the rate of 4s. 6d. In another part of the country another Division, the Hampstead Division of the British Medical Association, has had to take similar action. At the last meeting of the Hampstead board of guardians a deputation from the Hampstead Division presented a memorial protesting against the fee of 2s. 6d. for each successful vaccination and 1s. for each name placed on the list, offered for the posts of public vaccinator in the Hampstead and Kilburn districts in advertisements recently issued. The memorial pointed out that the fees were insufficient, having regard more especially to the facts that the average number of visits for each case of successful vaccination exceeds three and a half, and that in Hampstead a relatively small number of cases was scattered over a large area, so that the amount of time required for the discharge of the duties was disproportionately great. The board resolved to refer the memorial to the Finance Committee, and the Chairman said in reply to inquiries that, owing to the action taken by the British Medical Association, no applications had been received in response to the advertisement.

FLIES AS CARRIERS OF INFECTION.

THE part played by flies in the carrying of disease germs is a question which has recently come somewhat prominently before the medical profession. A good deal of work on the subject has already been done, especially in Liverpool and New York, and last year the President of the Local Government Board authorized an investigation into the possible carriage of infection by flies, under the general supervision of Dr. S. Monckton Copeman, F.R.S., in co-operation with Professor Nuttall, F.R.S., of Cambridge. As Dr. Newsholme points out in the preface to a preliminary

report[1] of this investigation just published, several years will have to elapse before the relation of flies to certain diseases can be definitely ascertained, and the investigation completed, but in the meantime many interesting points crop up justifying the publication of these preliminary papers. The report contains the following: (1) How to distinguish the more important species of flies found in houses, by Mr. E. E. Austen, of the British Museum; (2) Mr. Austen's notes on flies examined during 1908; (3) Mr. Jepson's report on the breeding of the common house-fly during the winter months. In examination of sets of flies from a number of centres in London, collected on twenty-three different days at intervals varying from one to seven days, Mr. Austen found ten or eleven species, but the majority occurred seldom. The commonest species were the common house-fly, *Musca domestica;* the lesser house fly, *Homalomyia canicularis;* the blue-bottle, *Calliphora erythrocephala*, and the *Muscina stabulans*. The distinctive characters of the more important species are given in a synoptical table, and a plate of diagrams is appended. The differentiation of the insects is seen to be easy, the characteristics of the fourth longitudinal vein in the wing being one of the important points to note. The breeding grounds of the house fly are accumulations of horse manure and house refuse, and, this being so, such collections should be frequently removed or destroyed, especially during the summer months. Mr. Jepson shows by a series of experiments that flies, provided the temperature is suitable, may go on breeding during the winter months. The duration of the various stages at an average temperature of 70° F. he gives as follows: The eggs hatch in twenty-four hours, the larval period occupies eleven days, the pupal on an average ten days. He concludes that much might be done, in reducing or even exterminating flies, if isolated colonies living in certain warm places over the winter months were carefully looked for and destroyed. This certainly seems sound advice, and might in many instances be easily acted upon. The report should prove of use to the laity as well as to the medical profession, and will contribute to the more general recognition of the danger of flies.

[1] *Reports to the Local Government Board on Public Health and Medical Subjects* (New Series, No. 5). Preliminary Reports on Flies as Carriers of Infection. London: Wyman and Sons, Limited; Edinburgh: Oliver and Boyd, Tweedale Court; Dublin: E. Ponsonby. 909. 2d.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE specimens added to the Museum of the Royal College of Surgeons during the present year, some 380 in number, are of exceptional interest. They are to be exhibited in the Council Room of the College on July 1st, 2nd, and 3rd. Among the more curious specimens added to the pathological series may be mentioned a part of the calcified aorta of King Menephtah, the Pharaoh of the Exodus, a very large calculus removed from the bladder of an Egyptian subject by Mr. O. Richards, a skull from one of the Cook Islands, showing extreme syphilitic lesions, another from the Gold Coast with an early condition of leontiasis, while a third from Fiji, presented by Mr. Glanvill Corney, exhibits a remarkable form of calvarial periostitis. The numerous additions to the pathological series are representative of the more recent advances in surgery and morbid anatomy, and will well repay a visit. Amongst the specimens illustrating malformations, besides two sets of additions illustrating clefts of the palate and congenital defects of the heart, are three of special interest. These are the skull and brain of a "steeple-headed" child of 7 weeks, presented by Dr. George Carpenter; the pelvic viscera of an individual, regarded in life as a woman, but in whom the sexual and accessory sexual glands were found to be completely absent; and the dilated rectum of a child, operated on some years previously for atresia ani, presented by Mr. P. Daniels. Important additions to the series illustrating the anatomy and physiology of the body will also be shown. The great collection illustrating the diseases of the ancient inhabitants of Upper Egypt, which formed a striking feature of the exhibition given last year, is now suitably arranged in the museum and supplied with a card catalogue, and open to the inspection of all.

THE MEDICAL DEPARTMENT OF THE BOARD OF EDUCATION.

BRADFORD has exerted a quite remarkable influence on the medical aspects of education. A great deal of the pioneer work in connexion with the medical inspection and examination of children in elementary schools was done in Bradford by Dr. James Kerr. Dr. Kerr became medical officer to the London County Council, and the value of his work is well known to all educational experts. His successor in Bradford (Dr. Ralph Crowley) has now received the appointment of assistant medical officer to the Medical Department of the Board of Education. All who know Dr. Crowley will acknowledge that his promotion is well deserved, and there is no doubt that his talents and ability will be utilized to the greatest advantage in promoting physical and mental efficiency in the elementary schools of the country.

THE BRISBANE AND QUEENSLAND BRANCH.

WE regret to announce that Dr. Archibald Birt Brockway has resigned the office of Honorary Secretary to the Queensland Branch of the British Medical Association, which he has held since 1901. During that period the membership of the Branch has increased from 127 to 160. Its present flourishing condition is due largely to the untiring energy and self-sacrificing devotion which Dr. Brockway brought to the discharge of his duties. Not only the Branch which he served so well, but the whole Association, owes him a debt of thanks for his work, in which he has been ably assisted during the last three or four years by Miss Earnshaw. Dr. Brockway is succeeded by Dr. Donald Cameron, of Brisbane, under whose fostering care there is every reason to expect that the Branch will continue to grow and prosper.

Medical Notes in Parliament.

The Local Government Board Vote.

Children.

DURING the consideration of this vote last week on Thursday Lord Edward Talbot raised the question of keeping children in workhouses, and advocated their removal from such surroundings by boarding out. Mr. Long, who followed, paid a compliment to the administration of Mr. Burns, and urged that there should be no undue haste in deciding on action with regard to the two reports of the Poor Law Commission. Mr. L. Haslam advocated the appointment of women in each union to supervise the boarded-out children. Mr. W. Crooks, who followed, made an interesting speech, in which he criticized all the plans hitherto adopted for dealing with the workhouse children, and urged that they ought, as a rule, never to come into the house, but that the guardians should take steps to prevent widows' homes from being broken up. The mother was the proper guardian, and a better could never be got. If adequate out-relief was allowed, it would not be more costly, and would be infinitely better for the children. He also advocated that imbecile children should be kept in separate homes up to 21 years of age, and that all Poor Law children should be under the Education

Authority as regards schooling. Mr. D. Maclean also spoke on the treatment of children, and urged that in the maternity wards some classification should be made so as to separate the young mothers from vicious inmates. Several other members having raised other points as regards the treatment of children,

Vaccination.

Mr. Lupton made a characteristic speech, in which he said that the President of the Local Government Board scattered with his right hand the blessing of ventilation, pure air, good drainage, and everything that could confer happiness on the community, while with his left hand he scattered poison, and strangled all the good that other departments under his control effected. Why should he go on scattering poison and persist in impregnating the blood of the people with it? He knew perfectly well—he must know—that there was a daily breaking of the law; that they were daily supplying stuff which was called "glycerinated calf lymph." They said that it could not do any harm, because they had looked through the calves. One would like to know whether the Local Government Board would persist in requiring, as it did some years ago, that the vaccinators should make four big marks on the body of the poor little infant. He would like to know whether an inspector, when he went to examine the arms of children who had been vaccinated, looked to see whether they had got these four big marks, and whether the bonus was given for torturing infants. Dr. Monckton Copeman, a well-known authority and a most scientific inspector, said that big marks were an exploded fallacy, that the marks were made by what he described as extraneous organisms, and that you might have perfectly good vaccination with hardly a perceptible mark. Mr. Lupton also cited a case in which injury was alleged to have been done by too early vaccination.

Tuberculosis.

Mr. J. W. Wilson next referred to the movement to combat the spread of tuberculosis, and urged the publication of elementary instructions as to how to act when phthisis occurs in a family.

Mr. Burns's Reply.

After some remarks on the administration of the Adulteration Acts, more especially with reference to margarine and butter, by Mr. Kilbride, Mr. Burns replied to the several speeches, and said that there were in England 233,000 children wholly or partly supported by rates in and outside Poor Law institutions. Of that total, 70,000 were boarded out in cottage homes, barrack schools, scattered homes, district schools, and workhouses and infirmaries. A child in a district school cost from 10s. to 13s. 7d. per week; in a barrack school the cost was from 10s. 4d. to 18s. 8d.; in cottage homes from 12s. 9d. to 25s. 2d. in a few cases; and in the scattered homes 8s. 6d. to 11s. 2d. So far as money was concerned, public benevolence towards the children dependent on the State was larger and more generous than in any other country. Of all the indoor children in England and Wales 58 per cent. were in cottage homes, scattered homes, or in separate institutions where their bodily or mental peculiarities could be more satisfactorily administered to than they could be in the old-fashioned general workhouse. He should not rest until the whole of the sick children in London workhouses and infirmaries, and also in the provinces, were transferred from workhouses and infirmaries to institutions in which they could be better cared for than they could be in those institutions, however good they might be. As regards boarding-out, he proposed to issue an Order to bring the children within the union under the inspection of the Local Government Board inspectors, and also under the supervision of visiting officers and other kindly disposed persons. An Order would be issued under which the guardians would be able to carry this out, and where necessary appoint female officers. As regards the transference of the Poor Law schools to the Education Department, he thought there was something in it. As regards tuberculosis, he thought much good would result from the Order already issued, and they intended to follow it up. The Notification of Births Act had been adopted by 140 towns and boroughs. The Registrar-General said that 84 large towns had adopted it, and that of the 140 which had altogether adopted it 18 of them were metropolitan boroughs. The City of London had adopted it, and he was pressing the remainder of the metropolitan boroughs to adopt it. If they did not do so he should take steps to force them. He was convinced that the Notification of Births Act, the regulations dealing with tuberculosis, and those relating to outdoor relief, would do a great deal towards stamping-out some of the worst diseases. He would consider how instructions might be issued as regards tuberculosis and its prevention. He was glad to say that the general infant mortality of the whole country had shown a direction downward. It had fallen from 140 or 150 to 113 throughout the whole country. He believed that the steps which had been taken through the Notification of Births Act would tend still more to the rapid diminution of infant mortality. Unfortunately, in some of the Midland and Northern towns, where too many married women go to work under conditions and at a time when they ought to be at home, and frequently resumed work when they should be nourishing themselves and sustaining their children by natural means, the infant mortality was still too high. That aspect of infant mortality had not been raised, but the infant mortality for which the Local Government Board was responsible was being dealt with. The Medical Department of the Local Government Board was going to follow up the excellent Report on Public Health and Social Conditions which had recently come from the Department, and intended to produce a special Report on Infant Mortality viewed from several aspects which had not been dealt with in the past. That inquiry was now going on, and the excellent books which had recently been published would be supplemented by a special report of the investigation into infant mortality. As regards the death-rate which happened occasionally, and, he admitted, too frequently in some of the worst districts, in the workhouses and maternity wards and infirmaries, it was only right hon. members should temper their reception of certain allegations made recently in various newspapers by a knowledge of facts and circumstances as to the death-rate of infants born, often to women who had been cruelly treated and beaten, overworked and badly cared for before they came into the workhouse, and very often absolutely in the process or immediately before the act of childbirth itself. It stood to reason that a child whose father and mother lived under the conditions from which this type of child was drawn could not be expected to live or to be as strong as children differently placed. Where 60 per cent. or 70 per cent. of the women who were in the maternity wards in London and other workhouses were illegitimate mothers, as against only 4 per cent. of illegitimate mothers outside, it stood to reason that the children who were the offspring of such women could not expect to live, or, if they lived, to be as strong as the children of legitimate parents. The hon. member for Merthyr Tydvil (Mr. Keir Hardie) shook his head. Did he agree with Savage, the poet, who himself was illegitimate, that illegitimate children were the sickly fruit of fond compliance? No; he could not. Did he take the converse view that illegitimate children, according to the same poet, were stamped in the mint of Nature's glowing ecstacy? Certainly not. What were the facts? The facts were that illegitimacy not only connoted moral delinquency, but also indicated physical degeneracy. (Mr. John Ward here interjected, "Nonsense.") If one visited the maternity wards it was easy to see how lack of food, overwork, and ill usage borne by the mothers had destroyed the power of the illegitimate child to resist disease. Hence during the first week of life the mortality of such children was greater in such wards than outside, but afterwards the infants improved rapidly under good feeding and good nursing with regular medical care. The matter would receive his best attention, but he was convinced that in the interests of the race the prenatal conditions of the children must be improved by saving the mothers from overwork, bad treatment, and bad food. The debate afterwards dealt mainly with unemployment, and late at night the vote was agreed to without a division.

The Spirit Duty and Medical Preparations.—Mr. Fell asked the Chancellor of the Exchequer if the additional duties proposed to be levied on chloroform, ether, and collodion were to be imposed for the purpose of raising further revenue or for the purpose of protecting whisky and other

potable spirits from unfair competition? Mr. Lloyd George said that he was afraid that he did not quite understand the hon. member's question. If he meant to imply that there was any serious risk of chloroform becoming a substitute for whisky and other potable spirits, the supposition, if he would pardon him saying so, seemed to be somewhat absurd. Mr. Fell asked what was the object of making the tax on collodion and chloroform 6s. and on whisky 3s. 6d. Mr. Lloyd George said it was not a duty on products. It was purely a duty on spirits, and it was to meet the practical difficulty of exercising the necessary supervision in every chemist shop, and of making special exemption of small amounts of spirit included in these separate preparations. Mr. T. F. Richards also asked whether the extra duty of 3s. 9d. per gallon on spirits would mean 6s. per gallon extra duty on rectified spirits of wine, so largely used in pharmacy, in the preparation of medicines, ether, chloroform, sal volatile, balsam, tinctures, etc; whether he was aware that wholesale druggists were already charging 6s. per gallon extra; and whether, in these circumstances, he could relieve the friendly societies' medical associations by exempting spirits used for medicinal purposes only. Mr. Lloyd George replied that he was aware of the fact mentioned, and he had given the matter very sympathetic consideration. He would have been glad had it been feasible to exempt from the additional taxation spirits used for medicinal purposes only, but, as he had already explained to the House, the practical difficulties were very serious.

The Indian Medical Service.—Mr. Kettle asked the Under Secretary for India whether, in pursuance of the scheme of reform outlined in the paper lately presented to Parliament, Indian medical men, not belonging to the Indian Medical Service, would be appointed to such posts as those of surgeon-general, professor in the medical colleges, physician or surgeon in Government hospitals, chemical examiner, sanitary commissioner, and the like, or whether it was proposed to appoint native Indians only to posts of minor importance? Mr. Hobhouse answered that the title of surgeon-general implied membership of the Indian Medical Service; as regards the other classes of posts mentioned, it would be seen from the published correspondence that the policy laid down by the Secretary of State contemplated a gradual extension, without restriction as to posts, of the employment of civil medical practitioners recruited in India. The extent to which this policy could be carried into effect, and the particular posts to which it could be applied, must necessarily depend largely on the qualifications found in the independent medical profession, from which it was intended that vacancies should be filled. As regards an inquiry whether the assistant surgeons in the General Hospital and Eye Hospital, Madras, were given no opportunity of performing major operations, Mr. Hobhouse said that the Secretary of State had no information, but would inquire.

Mosquito Extirpation in Egypt (Malaria).—Mr. Ramsay Macdonald asked the Secretary of State for Foreign Affairs whether early in 1907, under the supervision of Dr. Hugh Ross, steps were taken to extirpate malaria-breeding mosquitos from the district of Ghezireh, in Cairo; whether, after Dr. Ross's resignation, there were frequent changes of the Europeans who were in charge of the work; whether it was ultimately placed under the supervision of a native cabdriver, who had been coachman to the late adviser to the Minister of the Interior; whether, as a result, the campaign collapsed after the rising of the Nile last October; whether the Foreign Office was aware of any complaints being made that the malarial staff in Cairo was now altogether insufficient for its work; and whether, in view of the results obtained under Dr. Ross's supervision and of the importance of this work to the health of the city, the Egyptian Government would be communicated with on the subject. Sir E. Grey said that Dr. H. C. Ross was instructed in December, 1906, to take measures for the destruction of malaria-breeding mosquitos in part of Cairo and shortly afterwards at Heluan and in other quarters of Cairo. He was aware that after Dr. Ross's resignation the post which he had filled was given to an officer of the Royal Army Medical Corps, but had no information as to whether any other European was afterwards appointed to it. The latest information in his possession related to the month of June, 1908, and was to the effect that at that time the work at Heluan was being very efficiently supervised by a native employee. He had no information as to the collapse of the campaign beyond a statement made by Dr. Ross in a letter to the *Times* that a report to that effect had reached him, nor had he heard any complaints as to the insufficiency of the staff employed on this work in Cairo. He had no reason to doubt that the Egyptian Government was continuing to use its best efforts to stamp out malaria, and he therefore saw no necessity for the interference of His Majesty's Government in the matter. He would, however, make inquiries.

Fever in King's County.—Mr. Reddy asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that an outbreak of fever had recently taken place in Clonfanlough, Ferbane dispensary district, King's County, and that up to the present four deaths had occurred; would he state what time elapsed between the date of notification by the Member for the Division and the arrival of the inspector on the scene; whether he was aware that the spread of fever was due to the fact that not until after a fatal case did the people find out that fever was the cause of death; and, seeing that this had been the second outbreak in this district, would he grant sworn inquiry into this matter in order to give confidence to the people who were terror stricken? Mr. Birrell answered that he was informed by the Local Government Board in Ireland that there were 16 cases of enteric fever last month, at the place mentioned, but the Board did not know the exact number of deaths which had occurred. He understood that the hon. member communicated with the Board on May 25th, and that the medical inspector visited the district on May 28th. The first recognized case of the series was seen by the medical officer of health on May 15th, when he suspected the water supply to be the source of infection, and a sample of water sent for analysis had been found to be polluted. The medical officer appeared to the Board to have taken all reasonable precautions in connexion with the outbreak, which was now probably at an end, as no case was reported to have occurred since May 26th. The Board had brought the sanitary requirements of the locality under the notice of the district council, and had urged them to provide a proper water supply. There was nothing in the case calling for a sworn inquiry. On Tuesday Mr. Reddy pressed again for a sworn inquiry, on the grounds that the outbreak was due to the incompetence of the medical officer, and that it was the second outbreak of the kind. Mr. Birrell replied that in the opinion of the Local Government Board no blame attached to the medical officer of health in connexion with this matter. The previous outbreak of fever in this district had occurred some fifteen years ago. He had already stated that there was nothing in the case calling for a sworn inquiry.

Postal Servants (Vaccination).—Mr. T. F. Richards asked the Postmaster-General whether he was aware that the medical men attached to his department were refusing to accept persons for employment unless they could exhibit good marks of primary and secondary vaccination; and whether this was done with his sanction. Mr. Buxton replied that candidates for employment in the Post Office who had a conscientious objection to revaccination were allowed exemption therefrom on making a statutory declaration to the effect that they conscientiously believed that revaccination would be prejudicial to their health. Primary vaccination was, however, necessary. There was no reason to suppose that the rules were not properly observed; but if any case, thought to have been improperly dealt with, was brought to his notice, he would have inquiry made.

Vivisection: Report of Royal Commission.—In answer to Lord Robert Cecil, Mr. Gladstone stated last week that he was unable at the present time to say when the Royal Commission would make its report, but he understood that there had been no unreasonable delay in the proceedings.

Administration of Anaesthetics.—On Tuesday Dr. Cooper introduced a bill to regulate the administration of anaesthetics.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

YORKSHIRE.

THE MEDICAL OFFICERSHIP AT EASTBY SANATORIUM.

THE Bradford Poor Law Guardians recently offered the medical officership of this sanatorium to Dr. Margaret C. Macdonald, who has been acting for some time past as assistant medical officer to their workhouse. Dr. Macdonald's salary at the workhouse was £130 a year, with residence, rations, and washing. After resigning the latter post Dr. Macdonald discovered that the guardians were only willing to pay her £120 at the sanatorium, and very properly declined it. It is to be hoped that the guardians will recognize the excellent work done by Dr. Macdonald and give her at least the same salary as she received formerly.

BRADFORD BATHS AND ELECTRICAL TREATMENT.

Two or three years ago the Baths Committee of the Bradford Corporation proposed to instal high-frequency treatment at the Bradford Central Baths. The Bradford Division opposed the proposition, and a deputation from the Division interviewed the chairman and members of the committee, who finally agreed not to make the installation. Recently it was by chance learnt that the proposal has been revived, and a letter of remonstrance was sent to the Chairman of the Baths Committee. At his request the Division has appointed a deputation to meet the committee, and it is to be hoped that the Baths Committee will again give up this undesirable proposal. Facilities exist in the city for high-frequency treatment at the Royal Infirmary for the poorer classes, and under private medical supervision for those who are able to pay. The extension of the medical treatment of disease by bath attendants is to be deprecated.

TYPHOID FEVER IN ROTHERHAM.

Typhoid fever is endemic in the county borough of Rotherham, and in order to ascertain whether any special conditions capable of amendment are responsible for the continued prevalence of the disease the Local Government Board recently commissioned Dr. R. Deane Sweeting to make some inquiries as to the sanitary administration. The report upon his investigations has just been published, and is a valuable addition to the epidemiological records of the Board. During the sixteen years 1892–1907 the number of cases of the disease notified in the borough averaged 66, the lowest number in any one year being 42 and the highest 101. There have rarely been distinct outbreaks, so that Dr. Sweeting was able to eliminate as possible causes water supplies, or milk supplies, or articles of food such as shellfish, fried fish, celery, or watercress. Although the town is well sewered and is provided with suitable outfall works, there are still in existence over 2,000 midden privies of an objectionable type. They are for the most part open, sunk below the level of the ground with unbricked floors, and many are of huge dimensions. Provision is made in a private Act of Parliament for the rapid conversion of these very objectionable structures, and the corporation is empowered to pay a portion of the cost of such conversion, but for some reason or other advantage has not been taken of the Act. Dr. Sweeting recommends greater activity in the direction of converting the existing privies into waterclosets. He found that in 1906–8, of the houses provided with waterclosets, 16.3 per cent. were infected with typhoid fever, while of those provided with privies 21.3 per cent. were infected. Other causative factors were connected with defective administration. They included inadequate scavenging and disposal of refuse, insanitary conditions of back yards, badly ventilated houses, incomplete disinfection of infected articles, and the undue number of patients nursed in their own homes. Dr. Sweeting pays a well-merited tribute to the excellent services rendered by the medical officer of health (Dr. Alfred Robinson), and points out that the advice tendered in annual and special reports has not always been followed by the borough council.

It appears that Dr. Robinson, though in name the head of the sanitary department of the borough, divides his jurisdiction with the chief sanitary inspector. This is a condition which can only act to the detriment of the town, and the council ought at the earliest opportunity carry out the recommendation of Dr. Sweeting, and make the medical officer of health *de facto* as well as *de jure* the single head of the sanitary department.

CUMBERLAND.

PROPOSED SANATORIUM FOR SCHOOL CHILDREN.

AT a conference of delegates from the education authorities of Carlisle, Cumberland, Workington, and Whitehaven, from the committee of the Blencathra Sanatorium, and from the Charity Organization Society, held recently in Carlisle, it was resolved that it was desirable to establish an open-air boarding school for children of poor parents suffering from tuberculosis in an early stage in Cumberland. Dr. Morison stated that last year 19 cases of definite phthisis were found among 1,513 children examined in Cumberland, a proportion rather over 1 per cent. A committee was appointed to consider the cost and details of the scheme, and to report to a future meeting.

LONDON.

WEST AFRICAN MEDICAL STAFF DINNER.

THE summer dinner of the West African Medical Staff took place on June 21st at the New Gaiety Restaurant, London. Dr. W. Prout, C.M.G., occupied the chair, and among the guests were Mr. R. L. Antrobus, C.B., Mr. James Cantlie of the London School of Tropical Medicine, Mr. A. Fiddian of the West African Department of the Colonial Office, and the Hon. H. M. Brandford Griffith, Colonial Secretary, Gambia. In the course of the evening Mr. Antrobus, in responding to the toast of "The Guests," had something to say as to the future of the West African Medical Staff. Naturally he spoke in guarded terms, but it could be gathered that the decision of the Secretary of State on the multiple questions which have been so long at issue will prove to be of a more or less satisfactory nature. The Secretary of State has at present under consideration two reports—namely, that of the Departmental Committee which commenced its inquiry at the beginning of this year, and that on the sanitation of the West African Colonies prepared at the request of the Colonial Office by Professor Simpson during his expedition to West Africa last year. It seems probable that the Secretary of State will not be found to have accepted the recommendations of the Departmental Committee in their entirety, but, at any rate, some of the larger defects in the present administration of the corps will be removed, and the arrangements as to pay and allowances be so modified as to make the prospects of medical officers on the coast more hopeful than they are at present. But even more satisfactory in one way is the prospect of the establishment of a board of a general advisory character but charged primarily with the duty of laying down a sanitary programme and of securing its execution. Poorness of prospects and superfluous irritations due to faulty administrative methods have certainly counted for a good deal in creating the feeling of dissatisfaction which has prevailed among medical officers of the West African Medical Staff for the last two or three years, but to their credit be it said that another factor has been equally potent in that direction. The development of tropical medicine makes now feasible much that was formerly impossible, and has opened up for tropical countries a vista such as never before existed. Utilization of their immense resources in the way of natural products is no longer necessarily and inevitably accompanied by equally great sacrifices of human life. The fact that this is the case greatly increases the responsibilities of medical men working in the tropics, and to fulfil these adequately—to turn the existence of this fresh knowledge to the advantage of their white and coloured patients—demands from the West African Medical Staff, as was suggested by Dr. Prout in the few earnest sentences he addressed more particularly to its younger members, more self-forgetting devotion to practical and scientific work than ever. Nevertheless, however much these officers may strive, their efforts must be futile unless encouraged by local administrators, and co-ordination and continuity of work are

secured. So far there have been grave defects in all these directions, and the recognition by medical officers that their work is more or less wasted has been followed by perfectly natural and even praiseworthy discontent.

Officers Present.

The list of retired and present officers of the West African Medical Staff attending the dinner included in addition to Drs. Prout, C.M.G., A. H. Handley, C.M.G., and G. F. Darker, Dr. F. G. Hopkins, Deputy Principal Medical Officer, Drs. A. Pickels, G. S. Rutherford, and F. Manning, Senior Medical Officers; and Messrs. J. C. Bailey, D. A. Ashton, J. S. Pearsons, W. H. Peacock, R. P. Williams, J. P. Howe, W. Burrows, G. G. W. Kergevin, W. F. Taylor, H. G. McKinney, G. F. W. Ford, E. W. Graham, E. J. Tynan, J. Cross, E. C. Eliot, J. C. Franklin, F. J. A. Beringer, E. J. Kelleher, and P. M. Tobit.

WALES.

Sanitary Inspectors' Association.

The sessional meeting of the South Wales and Monmouthshire Branch of the Sanitary Inspectors' Association of Great Britain was held at Barry Dock on June 12th. The President, Dr. W. Williams, County Medical Officer for Glamorgan, was unavoidably absent through illness, and a telegram of sympathy was forwarded to him expressing the hope that he will speedily recover. Dr. Williams has been president of the centre since its inception, and he has always taken the keenest interest in the welfare of the sanitary inspector, and therefore his absence from the meeting was very much felt. Mr. Tordoff, Clerk to the Barry Urban District Council, was voted to the chair. Chief Inspector S. B. Sommerfeld read an interesting paper on the sanitary progress of Barry, in which he pointed out that the public abattoir was one of the most modern in the country, and the town's sewerage arrangements excellent. The death-rate of the town had decreased from 17.1 to 11.7 per 1,000 of the population, the reduction being principally due to improved sanitation. Inspector Hockley, Chief Port Sanitary Inspector, followed with a practical paper on food inspection. The delegates were entertained to luncheon by the District Council, the chair being taken by Dr. P. J.O'Donnell, Chairman of the Health Committee. Visits were afterwards made to the public abattoir, local hospitals, and the municipal buildings, a most enjoyable day having been spent.

Colliers and Doctors.

The following paragraph appeared in the *South Wales Daily News* of June 10th:

The doctors' question at Llanbradach has been settled at last, and to the satisfaction of the workmen, but apparently to the dissatisfaction of the local medical men. The local medical men endeavoured to enforce the system of payment of 3d. in the £, instead of 3d. per week per man. This brought about the deadlock, and the doctors gave notice to terminate their agreement, and this expired last week. The workmen's committee have now, much to the indignation of the medical fraternity, appointed Dr. Charles Hawkins of Caerphilly as their medical man on the old system—that is, 3d. per man.

The *South Wales Daily News* of the next day contained the following explanation:

With reference to the doctors' question at Llanbradach, it should be explained that while Dr. Charles T. Hawkins (Caerphilly) has been appointed under the old system of payment of 3d. per member per week, this is only by a minority of the workmen. The majority of the workmen have signed on the new system enforced by the local medical men, who gave notice to terminate their agreement, this system being 3d. in the £ per man.

Scotland.

[From our Special Correspondents.]

Medical Inspection of School Children.

The Edinburgh School Board, on June 21st, agreed to appoint two assistants to their medical officer, a male assistant at a salary of £250 and a female at a salary of £200 a year, to give their whole time to the work of the board. It was also agreed to appoint two nurses at a salary of £60 per annum each.

Dr. J. Hally Meikle, medical officer to the School Board, makes the following recommendations in his report for 1907–1908:

1. More strict inspection for and more stringent methods of dealing with dirty and verminous children. The appointment of the school nurse would secure the first, and there was ample work to be done. The second would be secured by taking advantage of the powers given under the new Education Act.
2. The following up of cases and home visits to see that any treatment recommended was carried out. This work would again fall to the school nurse. There were many parents anxious to do their best for their children, but ignorant of how to do it.
3. Schools for special skin diseases, chiefly favus and ringworm, a subject at present under the consideration of the board.
4. Relaxation of quarantine regulations for certain minor infectious diseases.
5. That the infectious disease history of pupils be recorded on their entrance forms.

The Earl of Wemyss, who is Chairman of Aberlady School Board, has submitted a resolution to the board on the subject of medical inspection of school children in East Lothian. The County Committee had recently issued a circular letter on the subject, recommending the appointment of a special medical officer for the county for school inspection. The resolution of Lord Wemyss is to the effect that the appointment of a county medical officer specially for the inspection of school children is uncalled for and would be a needless addition to the heavy school charges now borne by the ratepayer—charges which, when free education was first established, the ratepayer was assured would never exceed 3d. in the £—and also that before any steps are taken in furtherance of the committee's report full information be given of the total cost of the committee's plans and of the contribution thereto required from each individual board. The resolution has been adopted by the Aberlady Board.

Medical Tutorial Fellowships at Glasgow.

By the will of the late Dr. John Hall, of London, the medical side of Glasgow University will eventually come in for a large estate which is expected to realize over £35,000. Dr. Hall, who was an old graduate of Glasgow University, died on April 17th last, leaving an estate of the gross value of £88,366, subject to the life interest of his sister. A number of London medical and other charities receive donations, but the bulk of the trust goes to the Senate of Glasgow University as a endowment for the foundation of tutorial fellowships in connexion with the chairs of medicine, surgery, and midwifery. These are to be known as Hall Tutorial Fellowships, and are to be open to graduates of Glasgow University of not more than four years' standing. The election is to be made by a committee of the professors of the three subjects named, after examination (either a special examination or part of the graduation examination). Each fellowship is to be of the value of £200, tenable for three years. As many fellowships are to be founded as the income will permit; any surplus of income being applied for providing models, instruments, etc., for teaching purposes, or in providing prizes for deserving students. During the tenure of a fellowship the holder must not hold any other bursary scholarship or other educational endowment, nor engage in private practice or private teaching. He must reside within three miles of the university and must devote his whole time to practical instruction of students under the direction of the professors.

The Chair of Surgery in Edinburgh.

The vacancy in the Chair of Surgery in the University of Edinburgh, caused by the regretted resignation of Professor Chiene owing to ill-health, will shortly be filled. The patronage is vested in the Curators, and formal notice will be found in our advertisement columns that applications with relative testimonials must be lodged with Mr. R. Herbert Johnston, Secretary to the Curators, 4, Albyn Place, Edinburgh, on or before July 15th.

The Milk and Dairies Bills.

The Public Health Committee of Edinburgh Town Council have had under consideration the Milk and Dairies (Scotland) Bill and the Milk Control (Scotland) Bill, abstracts of which were published in the Supplement of June 12th. It was pointed out to the committee that the powers of local authorities which would be repealed by the Milk and Dairies Bill were in many respects superior to those contained in it, and it was agreed to approach other local authorities with the view of making arrangements for amending the bill in the direction desired.

HOSPITAL TREATMENT OF PHTHISIS.

At a meeting of the Town Council of Edinburgh on June 15th it was agreed to increase the authorized number of beds set apart for phthisis cases in Colinton Mains Hospital from 50 to 62, and that six pavilions to accommodate 12 patients be provided at a probable cost of £120, the estimated annual cost of treating 12 additional patients being £250.

PAROCHIAL MEDICAL OFFICERS IN THE HIGHLANDS AND ISLANDS.

We have received a letter from a parochial medical officer in one of the western islands of Scotland, giving his experience of the work he is expected to do and the hardships he has to undergo for a salary of £126 per annum. As the experience of this medical officer is that of many of the medical officers in the Highlands and islands of Scotland, the publication of the facts should serve as a warning to others. The advertisements which appear from time to time asking for candidates for these posts may seem to young and inexperienced graduates rather tempting, for besides the salary offered for the parochial appointments the advertisement generally states that there is a free house and good scope for private practice.

Our correspondent tells us that in his case the salary, including parochial, lunacy, vaccination, school and public health, work was £126 per annum. The island contains a population of 6,000, is 40 miles long, 10 to 12 miles at its broadest part, and 2 miles at the narrowest. Vaccinations had to be done, some of them 40 miles from our correspondent's house, necessitating long and trying journeys, with the expenses of the same, including night's lodging and board and fares by steamer, or horse hiring when available. No travelling expenses were allowed. In the first six months our correspondent held the appointment he had a list of over 100 vaccinations, for which he received 40s., the allowance for vaccination being £4 a year, the medical officer not being paid so much for each vaccination. Pauper lunatics have to be visited once a quarter, for which the doctor gets £6 per annum. Forty-eight visits were paid to these cases, at an average distance of 10 miles; this works out at about 4s. a visit. No travelling expenses are allowed.

The house provided for the medical officer on this island was leaking in every room and was in a bad state of repair. The difficulty of getting provisions and fresh food is also a serious factor in connexion with these appointments, especially during the winter months, tinned provisions being the mainstay. Fuel is also a serious item of expenditure, the supply of peat to keep fires going having cost our correspondent 12s. a week.

Private practice proved a delusion and a snare. The scheme under which it is worked is that the crofters pay 5s. per annum, and if they all paid the amount would come to about £100 per annum. For this the medical officer would have about 300 families to attend residing within a radius of 20 miles. The doctor is supposed to get paid for medicines supplied, but unless the amount is prepaid he has little chance of getting it; in the experience of our correspondent only 20 per cent. of the patients paid for their medicines. Our correspondent works out the remuneration he received for some of his visits to the outlying crofters at the rate of 1d. a week; he had to walk 20 miles to see them, and either stayed at a house not possessing the most sanitary surroundings, as the olfactory organs soon discovered, or else put up at the nearest hotel, which meant, of course, the expense of board and lodging for the night.

Our correspondent states that for six months he covered an average of 400 miles a month, and mostly on foot, and there was seldom a day without a strong wind blowing, sometimes half a gale. Most of the travelling was over extremely rough footpaths, covered with stones and rocks, very steep and impassable except on foot. He calculates his out-of-pocket expenses for travelling at £50 per annum, and as he says, "combine this with a leaky house, tinned provisions, and you have as undesirable and unremunerative a place as could be found anywhere." Any one taking up an appointment in this particular island will have to pay a good deal to get there, and as his tenure is likely to be short, in a few months will have to pay a similar sum to get away. Any one bringing furniture will in all probability leave it there, as, after being knocked about from rail to steamer and from steamer to boat, and from thence by any available means of carriage, it will hardly be worth carrying away.

We have frequently in the columns of the JOURNAL drawn attention to the hardships of the parochial medical officers in the Highlands and islands of Scotland, mainly on the ground of harsh treatment on the part of the parish councils. This is an instance not, as far as we can gather, of harsh treatment, but of a sweated medical practitioner who, doubtless thinking the salary and prospects of private practice looked good in the advertisement, resolved to give it a trial. The vicissitudes of climate combined with the amount of bodily fatigue which the medical officer is expected to go through in order to reach patients living many miles away from his house seem more than mere man is able to endure. We therefore again warn young medical men against these appointments, and if they are tempted to apply for them they should consult the Secretary of the Scottish Poor Law Medical Officers' Association, Dr. W. L. Muir, 1, Seton Terrace, Glasgow, who has all the information necessary regarding them, and who, we feel sure, will be ready to advise any young man on the subject.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EMERGENCY CASES.

AT a recent meeting of the Galway Urban Council, Sir James O'Donohoe, J.P., expressed some not unnatural indignation at the working of a regulation with regard to the admission of emergency cases into workhouse infirmaries. A man was run over by a scavenging cart and was obviously seriously injured; a police sergeant was appealed to, and said that he could not remove the man without an order from the dispensary medical officer or a ticket from the relieving officer. Sir James O'Donohoe, on his own responsibility, secured a van and removed the sufferer to the county hospital, where he died two hours later. The incident illustrates one of the anachronisms of the Irish Poor Law. The police sergeant was wrong in stating that the dispensary doctor had power to send a patient to the workhouse infirmary; neither he nor the medical officer of the workhouse has such power. According to unrepealed regulations, admission can only be granted by the board of guardians in session, the relieving officer, or in cases of sudden and urgent necessity by the master of the workhouse. This places upon the master the responsibility of deciding, in the absence of a line from the relieving officer, whether the case is sudden or urgent—a decision which has often been most unfairly criticized, where the master has exercised his judgement to the best of his ability but the board of guardians or the Local Government Board has taken a different view.

If a patient belongs to another union and has no friends on the board, the master is often between the hammer and the anvil. If he admits such a case the guardians fall foul of him, and if he does not, and the patient dies, the Local Government Board will probably call on him to resign; we have reported several such cases within the last few years.

The Irish Poor Law of 1837 and the existing general regulations framed upon it were designed to keep people out of the workhouse, and the attempt of the Local Government Board to modernize these institutions in face of these regulations has resulted in a hopeless muddle. Another Poor Law anachronism is that patients have to be detained in hospital long after they are fit to leave, because there is no provision for treating them as out-patients. Possibly some medical officers may do so, but they run the risk of sworn inquiries and unknown pains and penalties for transgressing the general regulations which take no cognizance of the needs of convalescents.

TUBERCULOSIS IN COUNTY DOWN.

At the annual meeting of the Down County Council the Chairman (the Right Honourable Thomas Andrews), after dealing with the various improvements which had been

brought about since the council came into office ten years ago, made an eloquent plea for further measures to prevent tuberculosis. Some 5,000 inhabitants of the county were, he said, suffering from the disease, and some 500 died each year. At imminent personal peril people rushed to the rescue in case of a threatened accident, and yet they were content to sit quietly with folded hands with 500 of their friends and neighbours dying annually from this white scourge. An example had been set at the county infirmary, unfortunately on too small a scale. They would probably soon have a disused workhouse, or an unused coastguard station; might such buildings not form a nucleus of a sanatorium? He commended the problem most earnestly to the members.

MEDICAL BENEVOLENT SOCIETY.

The annual meeting of the Belfast and County Antrim Branch of this society was held in the Medical Institute, Belfast, on June 18th, the President, Professor Symington, in the chair. Dr. Fielden, Honorary Secretary, submitted the annual report, which showed that £164 6s. 11d. had been raised. The subscriptions included £100 7s. from 139 Belfast practitioners, £27 11s. from 40 country practitioners, £6 11s. from the Belfast Medical Students' Association, and various donations. The committee expressed its hearty appreciation of the subscription from the medical students. The amount of £135 was distributed in sums of from £10 to £15. The President, in moving the adoption of the report, said efforts should not be relaxed until a minimum of £200 of annual subscriptions was reached. The society was enabled to afford assistance to extremely deserving cases. Dr. R. J. Purdon, who seconded, said that although there was a certain monotony in the annual complaint of the apathy of the profession, yet both numbers and contributions had increased; still some 70 or 80 members of the profession in Belfast and 160 in the country had never given anything. On the other hand they compared favourably with England, a much richer country, where the profession gave 1s. 4d. a head to its benevolent fund as against 3s. 7d. a head given by the Irish, or nearly 7s. 6d. from this branch. Dr. Gaussen (Dunmurry) moved the re-election of Professor Symington as President, and Dr. Wadsworth seconded. The motion was passed with acclamation. On the motion of Dr. Calwell seconded by Dr. Maguire, the committee was elected as follows:—Sir William Whitla, Sir John Byers, Professor Lindsay, Drs. McLorinan, J. W. Taylor, Cecil Shaw, R. J. Purdon, William Gibson, Gardner Robb, Macarthur (Greyabbey), St. George (Lisburn), Gaussen (Dunmurry), Greenfield (Holywood). Dr. Fielden was re-elected Honorary Secretary and Treasurer, and Dr. Calwell made reference to his indefatigable services.

Correspondence.

TREATMENT OF SCHOOL CHILDREN.

SIR,—Dr. Lauriston Shaw attributes my dissent from the views of the Branch circular to my "misapprehension of existing conditions." This has been revealed to him by the fact that in my letter I three times use the term "school doctor." "But," says Dr. Shaw, "the whole point of the trouble is that there is no school doctor." I am quite aware, and in each of my three allusions to school doctors I made it clear I was aware, that their functions were investigation and not treatment; but it seems incredible that Dr. Shaw, or any one else interested in this question, should not know that the officers are appointed and discharge their duties under the title of "school doctor."

I ventured in my letter to question whether the consultative principle would, as the circular stated, be infringed by a child being received for treatment on the notification of a school doctor. Here is Dr. Shaw's pronouncement on this subject:

> One could no more act as a consultant to a medical inspector debarred from practice than to a relieving officer without a professional qualification.

I commend this doctrine to the Ethical Committee, but Dr. Shaw may be interested to learn that the officials to whom he alludes are *not* debarred from practice at all; fortunately, therefore, neither Dr. Shaw or anyone else will be called upon to put his rather inhuman edict into force.

But Dr. Shaw's proposal shows the impracticability of the consultative principle, and the oppressive manner in which it might be manipulated. Although Dr. Shaw discusses the minor question, such as this "consultative principle," he does not meet the more important objections to the policy urged upon us by the Branch Council. He does not explain why a grant should be forbidden to a hospital from the London County Council while it is allowable to be accepted from the Poor Law and from other public bodies.

Nor does he explain on what grounds a school child can be refused treatment for some diseases and accepted for others. No doubt there is abuse of out-patient departments, but of all the cases that are appropriate for treatment it is these cases which we are now urged to refuse because the public has recognized their importance and offers payment in return for their treatment.—I am, etc.,

London, W., June 22nd. SIDNEY PHILLIPS.

SIR,—I think it is to be regretted that public attention should have been called to the recent decision of Great Ormond Street Children's Hospital with regard to the treatment of London County Council school children. It is the result of precipitate action on the part of the Committee of Management without previous consultation with the Medical Committee. I have drawn the attention of the Medical Committee to the matter, and I have no doubt that the Committee of Management, who have always shown themselves exceptionally responsive to the suggestions and desires of the medical staff, will reconsider the question at the earliest opportunity.—I am, etc.,

J. HERBERT PARSONS,

London, W., June 18th. Ophthalmic Surgeon to the Hospital.

SPEECH FRIGHT.

SIR,—Although "Celt" has concealed his identity, there are two things we have learnt about him: he can write a readable letter and he can make a good speech. The latter fact he hardly seems to be aware of, but the symptoms are too well marked to admit of mistake. There is no more certain sign of coming success than speech fright which comes short of actual brain collapse. The state of nervous tension which precedes a vocal effort is a certain sign of a mental energy that will appeal to others. The intensity of feeling which produces speech fright is identical with that which impresses an audience. Probably no one who has not suffered from speech fright has ever made a speech really worth listening to. The fact is well known to teachers of singing and of elocution. Nothing pleases them better than nervousness before a first performance. It shows that the pupil has intense feeling, and if he has feeling he can put it into his words. Meanwhile, whether it is from the habit of suppressing our feelings, or from an acquired contempt of all emotion, doctors are rarely able to make speeches, and almost as rarely (as "Celt" truly suggests) to write readable English. I remember at the first dinner of the Polyclinic Mr. Alfred Lyttelton mercilessly chaffing the medical profession on being absolutely unable to make a speech. There were about 400 doctors present, and not one of them was able to controvert his statements, or to give a practical demonstration that they were unfounded.

One of the best accounts of speech fright ever written is probably that in Rider Haggard's book called *Mr. Meeson's Will*. In this case an eloquent young barrister, with the whole case at his fingers' ends, is unable in court to speak a single word. When he is in the last extremity of despair some occurrence in the court makes him laugh. The laugh causes some diversion of the circulation in the brain, and the speech fright is gone. His eloquence immediately returns. He carries the whole case through singlehanded without a hitch, and of course gains it.—I am, etc.,

London, S.W., June 16th. J. FOSTER PALMER.

SIR,—The discussion taking place concerning the causation and cure of "Speech fright" in the columns of the BRITISH MEDICAL JOURNAL, which has gained the attention of the general public through the *Daily Mail*, will result in

incalculable evil and widespread injury being done if the remedy suggested by more than one medical correspondent—namely, the taking of opium—is seriously entertained by the average medical or lay reader, and if the advice given is not promptly met with an earnest warning that such a remedy freely recommended would surely bring consequences that would prove a thousand times worse to humanity at large than any amount of ill-delivered, and badly-prepared, but comparatively harmless after-dinner speeches that might be delivered in course of time.

The medical practitioner who is experienced and clear-minded enough knows well that to advocate opium, morphine, cocaine, and such-like drugs is to create and spread a craving more dangerous than that so commonly observed for alcohol. Cases which come before him prove indisputably that once the assuaging and exalting effect of opium is perceived by the patient there is every likelihood of a desire for more being created, which is frequently so strong that a hopeless and degenerate future is unavoidable. The drugs named give temporary relief or stimulation, but they are equally certain to render the subject weaker to resist further increased desire for more. Taking once, gently persuades the speaker to take usually, which again invites him further to take just every time he wants it—which, of course, he soon finds is very frequently. Better that there should never be another after-dinner speech delivered than that in future the excellence thereof should depend chiefly upon necessarily increasing dosage of evil-bringing medicaments. Once the opium idea gained firm root amongst the masses, the extent to which it would be carried out would soon be quite appalling. The habit might even find its way into the pulpits, and perhaps be advocated there. Think, also, of an opium-stimulated Cabinet Ministry! For if temporarily effective for one, so also good for any and all.

I am myself a public speaker and a medical practitioner, and I would suffer the misery of a hundred dry mouths and repeated hours of speech-suffering before I took a single opium pill.

Most drug maniacs trace their misery to medical prescriptions. I would go so far as to recommend that certain drugs should never be administered through written prescriptions, but only handed over to the patient by the doctor with instructions for taking, the patient not even knowing the name of the remedy.

Speech or stage fright is a simple neurotic symptom—usually a sudden irruption of a sense of incompetency—a manifestation of mental, nervous, or physical incapacity. It is said to be on the increase, as, indeed, are all neurotic disorders. In some cases merely the general health is a little below par, at other times the digestion is particularly at fault, here and there we find a family history of either mental or nervous conditions of various kinds, and very often in others the heart is primarily or secondarily affected. The cure for such should not be a difficult matter—and a safe one when a truly scientific one—but necessarily a slower one than the taking of a dose of opium; yet a more lasting one, constituted of medicinal and dietetic measures, acting directly and indirectly, while, of course, habits, exercise, etc., should be properly regulated. But, in addition, experience has shown that hypnotic suggestion has a most powerful and rapidly curative influence, promptly correcting, as it will, obsessions of incapacity or ideas of recurring failure, helping a halting, nervous temperament, and even further enabling general treatment to be adopted pleasantly, thoroughly, and much more efficaciously. Dr. Woods has recently referred to twenty-eight cases of "speech fright" in the BRITISH MEDICAL JOURNAL, treated merely by hypnotism alone, out of which twenty-three gave satisfactory results and five were improved.

Speakers should not forget, however, that one of the most important factors making for easy, comfortable, and self-possessed powers for public speaking is, after all, a thorough grip of the subject. Many good speakers on favourite subjects fail occasionally through over-confidence in thinking they are sure to speak well upon almost any other subject. Moreover, it must be borne in mind that a difficult subject will sometimes cause a week of worry and anxiety before the speech is made, which will gradually upset the digestion, interfere with sleep, and unsteady the nervous system, to the end that some sort of speech failure or breakdown distresses both the speaker and the audience.

I see so much human wreckage caused by opium, morphine, and cocaine that I am simply amazed at the free advocacy of such a dangerous remedy as opium by medical correspondents in the BRITISH MEDICAL JOURNAL. I consider that doctors now thoroughly deserve the blame they are getting from clear-headed critics for actually creating drug-maniacs. It is eloquent that some of the worst cases among my patients have been medical men.—I am, etc.,

Caterham, June 16th. HAYDN BROWN.

SIR,—It is most interesting to read the various letters on speech fright, and I think most medical practitioners have had experience of this and other varieties of the same condition. I should like to state my experience of a case of "piano fright." I have on several occasions been called upon to treat this most distressing condition. A few months ago a lady visited me and said she had been suddenly asked to accompany a very celebrated vocalist at one of our leading London concert halls. She said that she was quite certain that as soon as she made her appearance on the platform she would go off in a "dead swoon" before ever she reached the piano. I endeavoured to reassure her, and ordered her the following draught a quarter of an hour before she came on to play: Sp. am. co., 60 minims; tinct. opii, 10 minims; camphor water, 1 oz. I saw her at the hall just before the concert commenced, and she was then in a very nervous state. I never heard her play better, and she told me afterwards that the draught steadied her so thoroughly that she was not in the least nervous throughout the evening. She has had a similar draught since on more than one occasion with equally successful results.—I am, etc.,

Margate, June 15th. SANDERSON MELLOR.

INTERNATIONAL NOTATION OF ASTIGMATISM.

SIR,—In the report of the Ophthalmological Society on page 1482 of the JOURNAL of June 19th, Mr. Jessop's note as given under the heading of "International Notation" is certainly misleading as far as the notation of astigmatism is concerned. Any one reading it would come to the conclusion that it had been agreed upon, as printed there, that henceforth

> the axes should be measured and represented in the *lower* semicircle of the trial frame; the numbering of the axes should start from the middle line of the face in each eye, and proceed *downwards* and temporalwards; the zero would therefore lie at the nasal end of the semicircle, and 180° at the temporal end; 90° would be *below* and midway between these points.

This is sure to give rise to no end of confusion, and no one is likely to come to the conclusion that the Eleventh International Ophthalmological Congress held at Naples in April, to which the committee referred to had been appointed to report, almost unanimously resolved the following—namely:

> That the axes should be measured and represented in the *upper* semicircle of the trial frame, that the numbering of the axes should start from the middle line of the face in each eye and proceed *upwards* and temporalwards, and that the zero would therefore be at the nasal end, 180° at the temporal end, and 90° *above* and midway between these points.

What actually occurred was this. The report of the committee (appointed at the preceding congress held in Lucerne in 1904, and consisting of seven members representing Austria, Belgium, England, France, Germany, Italy and Switzerland) had been drawn up substantially as stated in your issue of June 19th, and handed to each member of the congress on arrival at Naples. During the two days preceding the discussion of this report the committee had had ample opportunity to convince themselves that the proposal of selecting the *lower* semicircle of the trial frame would be rejected by almost every one; they therefore had resolved to agree to the selection of the *upper* semicircle for the notation of the axes. When the matter came before the well-attended meeting, the *upper* semicircle was adopted for notation by an overwhelming majority.

The notation as adopted being so completely opposite to the one published in the committee's report, it is difficult to see why the latter, after its almost unanimous rejection, should have been published at all, and especially without

the all-important addendum that it had been rejected in favour of the opposite notation.

It may be some time before the *Transactions* of the congress appear, and I beg, therefore, that you will kindly insert this correction in your next issue, in order to minimize the confusion that the statement in your last issue is bound to provoke.—I am, etc.,

Liverpool, June 19th. KARL GROSSMANN.

EPITHELIOMA OF THE OESOPHAGUS.

SIR,—The case reported in the JOURNAL of June 12th by Dr. Basil Cook is an instance of a class of malignant growths well known to laryngologists, but of which little mention is generally made in the textbooks. They originate on the epithelium covering the posterior surface of the cricoid plate, and are variously described as epithelioma of the pharynx or of the oesophagus. Growing, as they do, on the cricoid, they are sometimes classed under extrinsic laryngeal cancers, but this is incorrect, for they arise on the epithelium of the alimentary canal. Mr. William Hill has urged the use of the term "party-wall cancers," but this nomenclature has the disadvantage of making no distinction between those growing on the posterior surface and those originating on the anterior aspect within the lumen of the larynx.

A point of interest about these tumours is that, while they are fairly common in the female sex, they are almost, if not quite, unknown in men. Again, they are found at a comparatively early age, frequently between 30 and 35, so that the age of Dr. Cook's patient, which was 26, is not very far from the usual range.

London, W., June 14th. HAROLD BARWELL.

THE CAUSATION OF CANCER.

SIR,—Intending as I do to take part, at the forthcoming Belfast meeting of the Association, in the discussion on the notification of tuberculosis, I made only this morning the following preparatory note: "As in cancerous processes groups of cells may be supposed to have assumed ancestral reproductive functions, so in tuberculosis we may conceive that certain cells develop equally primitive hyperoxidizing functions." I added to my note: "This view incidentally offers an argument against the specificity of the germ plasm or germ cell."

Later on in the day I saw Dr. Marsden's letter[1] bearing the title that stands at the head of this answer. It is a pleasure therefore to me, in reply to his invitation, to express my agreement with him on several points. I am convinced, in the first place, "that the evidence so far adduced is in favour of a verdict of cancer from natural causes." I further share the impression that irritation, local or *antigenic* in its broadest sense, plays an important part in the development of cancer. And, lastly, I agree, as will appear from the note I have just quoted, with the view that the natural causes he invokes embrace a number of evolutionary factors. Indeed, I can add, I have long held and even advocated the opinion that most of the chronic pathological processes are susceptible of explanation on purely evolutionary principles.

The difficulties arise, as Dr. Marsden has probably anticipated or will experience, when these evolutionary doctrines are defined. No Weismannist or so-called neo-Darwinian, for instance, would consistently admit for a moment that the original destiny of the local cells could be changed, or much less even that so radical a transformation could be attributed to the environment. The Lamarckian factor of habit and use or the mnemic principle, as Semon has recently designated this attribute, would have to be postulated.

Dr. Marsden has presumably been influenced by Mr. Francis Darwin's last Presidential address on the movements of plants. This luminous review of the latest advances in the doctrine of descent should be in the hands of every pathologist.—I am, etc.,

Nice, June 7th. A. W. GILCHRIST, M.D.

THE DISTRIBUTION OF LONGEVITY IN ENGLAND AND WALES.

SIR,—Dr. Gordon's paper in the JOURNAL of June 5th loses a great deal of its value owing to his having looked on correction for age distribution as inapplicable—a position which he takes up without giving any reasons. That it has a very decided influence on such figures as he gives is shown by considering an imaginary case of two towns, one of which has 10 per cent. and the other 90 per cent. of its population over 75 years of age; the ratios of the deaths over 75 to the deaths at all ages will manifestly not give a true comparison of the respective longevities in the two towns. Of course such an instance is absurd, but differences in age distribution will certainly have some influence, and in many cases a considerable one.

To take a case in which I have the figures worked out. Averaging over the three years 1900, 1901, and 1902 in the case of males, the deaths over 75 in England were, in round numbers, some 10 per cent. of the total deaths, in Scotland slightly less, and in Ireland some 19 per cent. Does this show that longevity in Ireland was more pronounced than in the sister kingdoms? It suggests what is the fact, that there is a larger population over 75 in Ireland, a fact which can be seen at once from the census; but are these old people healthier? By no means.

The average common death-rate for 1900, 1901, and 1902 for the United Kingdom for those aged 75 and upwards was a shade over 160 per 1,000. From this the number of deaths over 75 to be expected in each kingdom could be calculated; and while in England and Scotland fewer died than were to be expected, in Ireland there was a considerable excess.—I am, etc.,

London, W., June 7th. F. C. MARTLEY.

MEDICAL TREATMENT OF DUODENAL ULCER.

SIR,—Mr. Leonard Bidwell's address on the surgical treatment of gastric and duodenal ulcer, published on May 29th, is so admirable, and is, in addition, so free from the unblushing condemnation of all medical treatment which disfigures many recent surgical utterances on the subject, that I hesitate to offer criticism. He will, however, I hope, forgive me for challenging his statement that

> Gastro-enterostomy is also indicated in every case of duodenal ulcer as soon as it can be diagnosed, as practically no case of duodenal ulcer is permanently cured by medical means.

I shall not, I think, be contradicted when I assert that duodenal ulceration is a far commoner clinical event than is often supposed, and that *post-mortem* evidence of sound cicatrices of old duodenal ulcers is not altogether rare. The inference to be drawn from such assertion, if true, is obvious. Apart, however, from this, it is very necessary, before impugning the value of any medical treatment, to define what is meant by the term. If medical treatment means employing the archaic system of treating all cases of duodenal ulcer, acute and chronic, by "oral starvation," which also, be it noted, almost necessarily includes "rectal starvation" (since the nutrient value of even 20-ounce rectal enemata is very small), there is some justification for Mr. Bidwell's strictures. If, again, medical treatment means the adoption of the Lenhartz method of feeding, or other similar half-hearted procedure, he can find further support. Even then, however, we must acknowledge that many cases diagnosed as duodenal ulcer do recover when treated on these lines and do not relapse, though some are not improved, and others—an undetermined number—improve first and then relapse.

But the time is fast approaching when it will be fully recognized that the treatment, both from the medical and the surgical standpoint, of gastric and duodenal ulcer, as of other destructive tissue lesions, must be placed on a much broader basis than at present holds, even though starvation treatment or operation are the only alternatives offered for the acutest cases. It is now over two years since I first introduced the serum treatment of gastric and duodenal ulcer. I have in that time treated over 40 cases of chronic duodenal ulcer by a meat diet, and by administering by the mouth horse serum. In these cases there has been only one failure, in a gentleman who had a jejunal ulcer as well, both ulcers being excised by Mr. Moynihan. All the cases were most intractable to starvation treatment, Lenhartz's treatment, or meat diet without serum. They were all diagnosed as instances of duodenal ulcer by experts in different parts of the world, and constituted as rigid a test as possible, several being of over twenty years' standing. In addition I have notes in private letters from medical men of cases treated

[1] BRITISH MEDICAL JOURNAL, June 5th, 1909, p. 1392.

in the country by this method, in which success in the majority has been most gratifying. Failures, too, there are, though in some of these the diagnosis has subsequently proved to be wrong, whilst in others the conditions necessary for success have not been complied with. Unqualified failures, unreported, there are sure to be, and I am not without hope that this letter may discover them. The serum treatment is based on the strong probability that ulceration of the duodenum, as of the stomach, is only symptomatic of a yet undiscovered disease, and hence every effort must be made to encourage general nutrition, without which the promotion of local repair is impossible. To encourage general nutrition by full diet is indirectly to encourage the power of local repair. To promote directly local repair it is necessary to combine the peptic and tryptic bodies. This is partly effected by insisting on a proteid diet, which must not be of slop, and partly by administering, at the height of digestion, a serum rich in antipeptic and antitryptic bodies, which combine with the residue of peptic and tryptic bodies not satisfied by the proteid molecules. This at least is the *rationale* of the proteid and serum treatment, which in practice gives results incomparably better than any medical procedure yet devised. To hope in all cases to ensure rest of stomach and duodenum by starvation is to hope in vain, and merits the reproach of our surgical colleagues. Two years is all too short a time from which to argue as to permanency of benefits derived from the serum treatment, but before utterly condemning the medical treatment of duodenal ulcer it is worth investigating the claims of an absolutely harmless procedure. Without laying undue stress on the fact, it is worth recording that in the last ten months I have been asked to treat no less than 7 cases of gastric and duodenal ulcer in which gastro-enterostomy had completely failed to cure either the ulcer, the haemorrhage, or the pain. Such failure, however, in no way justifies the wholesale condemnation of a most valuable surgical operation.—I am, etc.,

London, W., May 29th. E. C. HORT.

"THE DOCTOR AS A VICARIOUS PHILANTHROPIST."

SIR,—I was rather surprised to read Mr. Owen Gwatkin's criticism of Dr. Wishart Kerr's courageous stand against the clamant demand for free medical attendance in cases of accident. Unless a man has abundant private means, those dependent on him must suffer if he gratifies his benevolent and altruistic aspirations by treating without charge any one who rambles, or is brought by sympathetic but parsimonious onlookers, into the surgery for first-aid. A few lessons of the kind Dr. Wishart Kerr administered would be most helpful in educating the public to a due sense of the fact that medical men are not usually rich enough to work for nothing.

I daresay most of us have had demands for the exercise of vicarious philanthropy from certain members of our own profession. Some medical men in large practice do not hesitate to encroach on the leisure of their professional brethren by asking them to do emergency work, which is, in some cases, not even acknowledged by a word of thanks, much less a fee. It is certainly making friendship a profitable thing when it can be used to save the expense of an assistant, and it is difficult if one is friendly with a man to hint that a friend and an assistant are not quite one and the same thing. The end of the matter seems to be that in a "business" world one must be "business" in self-protection, and philanthropy, "vicarious" or otherwise, is a luxury of the rich.—I am, etc.,

Falkirk, June 19th. GEORGE C. STEWART.

THE PROFESSION, THE ASSOCIATION, AND THE "JOURNAL."

SIR,—I quite agree with Dr. Harry Grey in saying "that about 90 per cent. of members belong to the Association for the sake of the JOURNAL alone." My point is that the converse is also true—that a large proportion of non-members do not belong to the Association because they do not want the JOURNAL. I cannot, however, agree with Dr. Grey that those outside the Association never look at a medical paper or attend a medical meeting. I think that quite a considerable proportion of non-members do take some medical periodical, and some at least attend medical meetings; and there is also the not inconsiderable point that in a badly-paid profession, the difference between 25s. and, say, 10s. 6d. per annum forcibly appeals to not a few.

I strongly hold that the solidarity of the profession—as evidenced by the absorption into the British Medical Association of practically every medical man practising in these islands—is of infinitely more consequence than any mere increase in the circulation of the JOURNAL. Whether the introduction of a lower-grade subscription would induce any considerable number of non-members to join is a point which the machinery of the Association might well be used to investigate.—I am, etc.,

Rochdale, June 22nd. J. CUTHBERTSON WALKER.

A MEDICAL ROLL OF HONOUR.

SIR,—You were good enough to publish in the JOURNAL of February 6th a list, compiled by myself, of medical men who remained in London during the Great Plague. I thought that list was complete. I regret to find it was not. Dr. J. A. Nixon, of Bristol, has kindly called my attention to the following notice in the *Intelligencer* for August 7th, 1665, from which it appears that two other names must be added:

> Whereas, since the appointment of two Physicians (Dr. Hodges and Sir Thomas Witherley) to administer to the Infected in and about the City, the Plague has so encreased, that it is requisite there should be a greater number to take care of the Sick, Be it Known that Doctor Nicholas Davis, a Member of the King's College of Physicians, living in Austin Friars, and Dr. Edward Deantry, a Member of the same Society living, in Broad Street, being two of those Physicians that were presented* by the College to the Right Honourable the Lord Mayor and Court of Aldermen of the City of London for prevention and cure of the Plague, have thought fit, upon principles of Honour and Conscience, to declare that they are ready and willing to attend the said service and to visit all such persons in and about the City and Countries adjacent as shall desire their assistance and directions.

My biographical notes, therefore, published on February 6th, require supplementing by the two following addenda:

Davys, Nicholas, of Austin Friars, was a native of Devonshire, M.D. of the Universities of Leyden and Oxford and Hon. F.R.C.P. I have been unable to recover the dates of his birth and death.

Deantry, Edward, of Broad Street, was M.D.Oxon. and Hon. F.R.C.P. Further particulars of him are wanting.

—I am, etc.,

London, W., June 14th. S. D. CLIPPINGDALE.

THEORY AND HYPOTHESIS.

SIR,—It would be a gain if writers of textbooks on medicine would substitute the word "hypothesis" for the ambiguous word "theory," which nobody can accurately define, and which is sometimes used as equivalent to hypothesis, and sometimes as equivalent to a general law or truth, as when we speak of the theory of the tides.

Instead of "theories" as to the etiology of gout, chorea, etc., we should read "hypotheses." For what is a hypothesis? It is a scientific guess. It is any supposition which we make (either with or without actual evidence, or on evidence avowedly insufficient), in order to endeavour to deduce from it conclusions in accordance with facts which are known to be real.

The hypothesis must fit the facts. The facts must not fit the hypothesis. And in order to demonstrate the truth of any particular hypothesis we must show not only that it will explain all the facts, but that no other hypothesis will.—I am. etc.,

June 20th. M.D.

* Dr. Liveing, Registrar of the Royal College of Physicians, has been so good as to send me a copy of the Latin minute dealing with this matter. From this minute it appears that the following eight Physicians were originally nominated: "Dr. Joannes Wybred, Dr. Guls. Conyers, Dr. Humphredus Brooke, Dr. Nathaniel Hodges, Dr. Edwardus Deantry, Dr. Nicolaus Davys, Dr. Lancelot Harrison, and Dr. Witherley." I have been unable to find evidence that Drs. Wybred and Lancelot Harrison remained in London.—S. D. C.

Universities and Colleges.

JOINT MATRICULATION BOARD OF THE UNIVERSITIES OF MANCHESTER, LIVERPOOL, LEEDS, AND SHEFFIELD.

An agreement has now been drawn up for an interchange of matriculation certificates issued by the Joint Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield, and the University of London. In each case there are certain obligatory subjects without which no certificate is issued. In London these are English and mathematics, while under the Joint Board they are either English language or English literature, English history, and mathematics. Each system also requires three other subjects from a list specified in their syllabus. In order to obtain recognition of the certificate by both bodies, these three optional subjects must be chosen from the following list: Greek, Latin, French, German, mechanics, chemistry, geography. The Joint Board further requires that one of the subjects shall be a language. The London University requires that one of the three subjects must be either Latin or a science, and that if Latin be not taken, one of the other subjects must be another language from the list, and further, that the certificate should state that the candidate has passed in "unprepared translation in lieu of set books." These conditions are what each body requires from its own candidates.

THE VICTORIA UNIVERSITY OF MANCHESTER.

Chemistry Department.

Mr. A. Lapworth, D.Sc., has been appointed a Senior Lecturer in Chemistry and Assistant Director of the Inorganic Laboratories. He has also been elected to a Schunck Fellowship, part of the duties of which will be to conduct and supervise research in the Schunck laboratories. Mr. Lapworth is at present head of the chemical department of the Goldsmiths' Institute, London, and is the son of Dr. Lapworth, Professor of Geology in the University of Birmingham.

Visit of the King.

At a meeting of the University Council the Vice-Chancellor said that it was expected that the King would make a short stop at the university on the occasion of his visit to Manchester to open the New Infirmary on July 6th, and an address to be presented was approved.

Popular Lectures.

Arrangements have been made for a series of free popular lectures on Monday evenings during the coming session, and in addition a series of museum lectures will be given by Professors Flinders Petrie, Boyd Dawkins, Hickson, and Weiss.

UNIVERSITY OF EDINBURGH.

Medical Education.

At a meeting of the Students' Representative Council on June 17th it was agreed:

> That the Senatus be petitioned to appoint a committee to institute an inquiry into the present state and methods of teaching in the Medical Faculty, with a view to increasing, if necessary, the amount of time spent upon practical training, and that a copy of this resolution be sent to the Dean and professors of the Medical Faculty.

The Services.

INDIAN MEDICAL SERVICE.

STUDY LEAVE.

The *Gazette of India* of May 21st contains the following: "Paragraphs 3 and 8 of the regulations regarding the grant of study leave to officers of the Indian Medical Service, as published in the Department of Military Supply, Notification No. 16 of 1907, are reconstructed as follows: Study leave may be taken at any time, but will not be granted more than twice in the course of an officer's service. This restriction does not, however, apply to an officer who has part of his furlough converted into study leave under Rule 8. Officers on furlough, or other leave, who wish to have part of it converted into study leave should address the Under Secretary of State, India Office, and should attach a statement showing how they propose to spend the study leave. Similarly officers on furlough or other leave who desire to have it extended for the purpose of study should address the Under Secretary of State, but, in addition to the statement of the proposed study, they must support their applications with documentary evidence of their having obtained the approval of the authorities concerned in India to their applying for an extension of leave."

The French Association for the Advancement of Science will hold its annual meeting this year at Lille from August 2nd to the 7th, under the presidency of Professor Landouzy, Dean of the Paris Faculty of Medicine. The Section of Medicine will be presided over by Professor H. Roger of Paris. The following questions are proposed for discussion: (1) The new methods of diagnosis and treatment of tuberculosis; (2) cerebro-spinal meningitis; (3) pathological physiology and pathology of the digestive canal.

Medico-Legal.

WORKMEN'S COMPENSATION CASES.

Chronic Bronchitis.

In a case heard in the Court of Appeal on May 26th, a man whose knee had been injured by the fall of a stone was compelled to crawl home as best he could. He was consequently exposed to the weather for three hours in December. As a result he suffered from double pneumonia which was followed by chronic bronchitis, and this prevented him from working. A county court judge refused compensation on the ground that the incapacity to work "was not the natural or probable result of the injuries." On appeal it was pointed out that, according to the medical evidence, the blow to the knee produced a shock which reduced vitality, and it was the exposure while his vitality was impaired which did the mischief. For the employers it was contended that the county court judge had found, and was justified in finding, that the man's condition was not the proximate cause of the injury. The Court of Appeal held that there was evidence worthy of consideration as to whether the man's weak condition was due to the accident. The real question was whether the man's condition was a result of the accident in this sense—that it was occasioned by the debilitated condition of the man immediately after the accident. The case was sent back to the county court judge for consideration in the light of this finding.

"Strained Heart."

In a case heard at Wolverhampton on May 25th, a brewer's labourer claimed compensation for strained heart, which rendered him incapable. It appeared that he had been in the employment of a firm of brewers for twenty-three years. On March 11th, 1908, he collapsed while carrying a heavy bag. He had previously had pains over his heart. A month later, Dr. Grout told him his heart was strained. His sick club paid him until September, when the firm paid him 5s. a week until February, 1909. Dr. Grout, in his evidence, said that the cardiac weakness was probably due to lifting heavy weights, but he could not say it was entirely due to what happened on March 11th. The county court judge held that the strain was due to the nature of the employment, not to an accident, and dismissed the claim.

Seamen and Industrial Diseases.

One of the anomalies of the Act was brought to light in a case which was heard in the Court of Appeal on May 25th. The applicant was a boatswain who had been employed as paint-mixer on board ship. Owing to his employment he suffered from lead poisoning, which disabled him from work. He claimed compensation, as lead poisoning is one of the industrial diseases for which employers are liable. It was pointed out, however, that compensation for industrial disease is only payable (1) on the certificate of the district certifying surgeon appointed for the district in which the workman is working; or (2) where a workman is suspended in accordance with special rules under the Factory and Workshop Act, 1901; or (3) where death ensues. The Court held that, as there can be no certifying surgeon in the case of a seaman at sea, there could be no claim in respect of an industrial disease suffered by a seaman.

"Arising out of the Employment."

The Court of Appeal on May 26th upheld a decision of the judge of the Gloucester County Court, who, sitting as arbitrator, refused compensation to a domestic servant injured in the following circumstances: She was employed as a lady's maid and sewing maid, and was sewing one hot night last June with the window open. A cockchafer, attracted probably by an electric light in the room, flew in at the window. To frighten it away, she threw up her hand, and struck herself on the right eye with the knuckle of her thumb. The result was the formation of a cataract, which, although removed by an operation, left her with permanently defective vision. In giving judgement, the Master of the Rolls remarked that what the court was really asked to do was to remove from the Workmen's Compensation Act the words "arising out of the employment," or to treat them as of no account. The Court could not depart from its invariable rule, which was to hold that it was not enough for an applicant to say that the accident would not have happened if he had not been in that particular place. The applicant must show that the accident arose because of something he was doing in the course of his work or because his work placed him in a position of peculiar danger. Unless that was established, the applicant must fail, because the accident did not arise out of the employment. In this case the maid was not placed in any position of special danger. The incursion of a cockchafer into a lighted room through a window was a thing that might happen to anybody, and it seemed impossible to say that the fright which led to the applicant putting her thumb into her eye was something caused by her employment. The other two judges concurred, and the appeal was dismissed.

Aortic Aneurysm.

Veritas.—We are inclined to the opinion that it is not possible to state with any approach to accuracy the length of time an aortic aneurysm has existed, nor is it possible to tell from a specimen the age of the pathological changes. The possibilities appear to be, from the evidence before us, that the man at the time of injury was the subject of atheromatous disease and that he had an aneurysm which up to that time did not cause incapacitating or disabling symptoms. A severe strain or effort occurring in a person suffering from atheromatous

degeneration of the aorta may produce damage there, but in the case as reported the strain can hardly be considered to have been severe, so that the presumption is in favour of the pre-existence of some form of aneurysmal dilatation. In a case of aneurysm, an effort may cause the dislodgement of a clot, but embolism may be merely a coincidental circumstance which would have occurred without the least relation to the trauma. It must be admitted that the displacement of a clot would be more likely to follow injury or effort, and it is quite clear that this patient became totally incapacitated immediately after an occurrence which might be regarded as an effort or strain. Whether or not the occurrence mentioned is an accident arising out of or in the course of the man's employment, is a question of law, and the opinion of a solicitor should be sought; he will advise if the evidence is of such a character to be capable of presentation to the county court judge for decision.

CORONER AND MEDICAL WITNESS.

MEMBER has sent us an account of an inquest recently held near Trowbridge concerning the death of a newly-born child, unidentified and found dead in a ditch. Our correspondent, the medical witness, after making a very careful *post-mortem* examination, came to the conclusion the child was born alive, had fully breathed, and had a complete and separate existence from the mother, the lungs having been fully inflated with air; and that it had died from asphyxia caused by external constriction round the neck. There was a distinct pressure mark round the neck ¾ in. wide, and at one place deeper marks, as if knots had been tied, and he concluded that either tape or some such material must have been used. He said, in answer to the coroner, that he did not think that the umbilical cord could have caused such a mark as he saw. Other questions were put to him rather disparaging to his evidence. Ultimately the inquest was adjourned to give the police time to make further inquiries.

At the adjourned inquiry, and despite the clear and distinct evidence of our correspondent, the coroner, who is a lawyer, summed up, and suggested that the jury could return one of three verdicts: First, of accidental death, by the cord getting round the neck at the time of birth; secondly, they could say "Found dead, with insufficient evidence to show the cause"; or, thirdly, they might return a verdict of wilful murder against some person or persons unknown, if they believed the doctor's evidence was sufficient, but he thought it was hardly conclusive.

The jury then retired, and consulted in private for some time, and brought in a unanimous verdict that the deceased was wilfully murdered by some person or persons unknown.

We agree with our correspondent that had the coroner been a medical man, he would have more fully appreciated the medical evidence; but, notwithstanding, "twelve good men and true" evidently fully believed the medical evidence given, and returned their verdict in accordance with it. We think now that the medical witness should rest satisfied.

Obituary.

EDWARD CHARLES CRIPPS,

EX-PRESIDENT GLOUCESTERSHIRE BRANCH, BRITISH MEDICAL ASSOCIATION.

MR. EDWARD CHARLES CRIPPS, of Cirencester, died recently after an illness which had lasted nearly two years, and necessitated more than one operation. The results of the latest seemed to promise entire recovery, and in that belief he had gone to Bournemouth to complete his convalescence, but dangerous symptoms reappeared, and he was removed to his home by motor ambulance, reaching it only two days before his death. His long illness had in nowise lessened the number of his friends, and the news that it had ended fatally was received with widespread regret. It was not quite unexpected, of course, by those in direct touch with Cirencester, but among his more distant friends it has caused much surprise; for Charles Cripps, as he was locally called, in contradistinction to the Edward Cripps who preceded him, had only reached the age of 54, and seemed an unusually healthy man, much more likely to survive than to predecease his compeers and coevals.

Mr. Charles Cripps came of an old Gloucestershire family long connected with Cirencester. His father practised in that town before him, his grandfather held a vicarage in the neighbourhood, and his great-grandfather represented the locality in Parliament for the long period of fifty years. His early education he received at Guilford, and on its completion joined St. Bartholomew's Hospital. There he forthwith became "Ox Cripps" to all and sundry, and by many of his friends would not have been recognized by any other title to the end of his life. It was a tribute alike to his physical proportions and to his sterling amiable character, for he possessed to the full those qualities of cheeriness, geniality, and coolness on all occasions, which are commonly supposed to accompany great physical strength and size. After receiving the diplomas of the two Royal Colleges in London in 1877, he served the hospital for a year as House-Surgeon, and then became Medical Officer to the Central London Sick Asylum at Highgate, an early example of the modern Poor Law infirmary, and at that time a show place among such institutions. This post he held for several years; then came a few voyages to the East as a medical officer in the P. and O. Steamship service; and finally his settlement in Cirencester in succession to his father. His life there was one both of professional and social success. A thoroughly sound surgeon and medical adviser, he was held in great professional esteem both among the general population and among his colleagues, his skill as an anaesthetist being especially esteemed by the latter. He was also a tower of strength in support of all outdoor occupations among both the younger folk and his older neighbours. An all-round athlete himself, he did much both for cricket and football in the town, and popularized swimming, in which art he was specially accomplished. It was he, too, who laid out the Sabberton Golf Course, and who founded what is now the Cirencester Golf Club. He was not, however, only an outdoor man. He possessed considerable musical talents, and was often called upon to use his attractive voice at social functions and on behalf of local charities; and he was a prominent Mason, a Past Master of the Cotswold Lodge, and Past Provincial Director of Ceremonies for Gloucestershire. Even from a mere sense of *esprit de corps* such a man as Charles Cripps was bound to become a member of the British Medical Association, and in Gloucestershire he did much to promote and consolidate its interests, both by leading other men to join this body and by taking an active part in its affairs. He was a ready and clear speaker whenever occasion required, and served a term of office as president of the Branch, and remained a member of the Branch Council up to the time of his death. Mr. Charles Cripps was married, and is survived by his wife, one of the Elliots of Andover.

FREDERICK NUTCOMBE HUME, M.R.C.S., L.R.C.P.,

MEDICAL SUPERINTENDENT NORTH-WESTERN FEVER HOSPITAL, HAMPSTEAD.

WE regret to record the death of Mr. F. N. Hume, which occurred at the age of 58, at his residence in Hampstead, on June 14th. His death was very sudden. He appeared to be in his usual health on Sunday, but in the night was seized with an acute pain in his chest, and was seen by one of the assistant medical officers. He remained in bed on Monday morning, and sent for his friend, Dr. W. F. Corfield, who saw him about 2 o'clock, when he seemed quite himself, but a few minutes after was seized with another attack of pain, apparently angina pectoris, and died immediately.

Mr. Hume was the third son of the late Rev. C. N. Hume, Rector of Meonstoke, Hants. He was educated at Marlborough School, and subsequently entered Wadham College, Oxford, in order to read for classical honours. After some two years, being strongly attracted to medical study, he joined the medical school of St. Thomas's Hospital, obtained the diploma of M.R.C.S. in 1876 and that of L.R.C.P. at a later date. During this student period he held the appointment of Clinical Assistant at the Victoria Park Chest Hospital. In 1876 he was appointed as one of the Surgeons to the National Aid Society's Ambulance in the Servo-Turkish War, and in the following year joined the Stafford House Ambulance in the war between Turkey and Russia. In 1878 he served for a time as Assistant Medical Officer at the Metropolitan Asylums Board's South-Eastern Hospital. He practised subsequently in Kensington for some years, and in 1885 again served with the National Aid Society in the Servo-Bulgarian War, and afterwards as Director of the English Hospital at Belgrade. He received the Takova, Medjidieh, and St. Sava Orders, as well as Turkish and Servian war medals.

In 1886 he re-entered the service of the Metropolitan Asylums Board as assistant medical officer at the South-Eastern Hospital, and was successively superintendent of

the Northern Hospital at Winchmore Hill, and of the North-Western Hospital at Hampstead, where he remained till his death.

On the formation of the Territorial Force last year Mr. Hume was the first to be offered the command of one of the newly-established sanitary companies, that attached to the 2nd London Division. He was gazetted Major in the R.A.M.C. Territorial Force last July, and since that time has worked hard to get his unit to the state of efficiency it has attained. The establishment of officers was only completed the week before his death, and the N.C.O.'s and men were almost up to the full establishment. His place will be difficult to fill.

His interest in public medicine was keen and unflagging. At the Northern Hospital, where there were large numbers of diphtheria cases among the convalescents from scarlatina, he was one of the first to test on a large scale the effects of the antitoxin treatment in the early stages of diphtheria. His reports on this experience are of much value. At the North-Western Fever Hospital he was appointed as one of the clinical instructors to London students. His teaching there was clear and practical, and greatly enjoyed both by himself and his pupils. He brought to his medical work in a high degree the essential qualities of a genuinely scientific mind, untiring energy, a deeply sympathetic nature, and a fine conscientiousness. His administration was able, and he won the warm regard and respect of all whom he served or who served him, whether in hospital or military work.

His many sorrowing friends can testify to his charming social qualities, and not least to the bright intelligence and kindly humour which inspired his conversation, and the high courage and promptitude which marked his actions.

He was buried at the Hampstead Cemetery on June 18th, the funeral being attended by his family and by many of the hospital staff as well as representatives of the Metropolitan Asylums Board, the Local Government Board, and the 2nd London Division of the Territorial Force, including all the officers of his unit; the coffin was carried by eight privates. He leaves a wife and two young sons.

Dr. Plumbe, who had practised for thirty-one years at Maidenhead, was found dead in his bedchamber on the morning of June 7th. He had attended as usual to his professional work the day before, and seemed to be well and strong when he retired to rest, but he had suffered from an attack of syncope three years earlier, and it was then discovered that he was already the subject of heart disease. His father died suddenly in December, 1876, at the age of 52, and Dr. Samuel Plumbe himself was only 56 at the date of his decease. He died unmarried. Dr. Samuel T. Plumbe was the son of Dr. Samuel Alderson Plumbe, who settled in Maidenhead in 1852. He studied at St. Bartholomew's Hospital. He graduated M.B.Lond., and obtained the diploma of M.R.C.S. and L.S.A. in 1877, and took the degree of M.D.Lond. in 1882. He held for a time after his first qualification the appointment of House-Surgeon to the Kent and Canterbury Hospital. In 1878 he joined his deceased father's partner, Dr. Edwin Cuthbert Montgomery, in practice. Dr. Plumbe was widely and deservedly popular, being skilful, prompt, punctual, and extremely humane. His funeral, which took place at Maidenhead Cemetery on June 10th, was very largely attended, and the assemblage of persons representative of all classes was a striking testimony to the affection and esteem in which he was held throughout the town and district.

After a seizure of double pneumonia on May 27th Dr. J. H. Williams passed away at his old home, Llanidloes, North Wales. The news occasioned universal sorrow at Aberavon. He was born in 1857, and was the son of the late Thomas Williams of Llanidloes. He received his medical education at the London Hospital, and about fifteen years ago settled in Aberavon, where he quickly became popular through his genial and kindly nature. His popularity may be judged from the fact that a couple of years after his advent he contested a seat on the town council, and was returned at the head of the poll. He was soon added to the Commission of the Peace for the borough of Aberavon. After being again returned at the head of the poll he was made an alderman, and in the year 1901-2 occupied the mayoral chair of the borough. He was afterwards put on the Commission of the Peace for the county of Glamorgan. He represented the council on the Port Talbot Pilotage Board and the Port Sanitary Authority, and was a Freemason for many years. He was Medical Officer for Port Talbot Docks and Railway; Surgeon to the English Celluloid Company; Surgeon to the Whitworth Collieries; Medical Inspector of Seamen; Surgeon to various works and insurance societies. He leaves a widow and two young daughters.

Public Health
AND
POOR LAW MEDICAL SERVICES.

THE ADULTERATION OF RICE.

The Local Government Board has issued a report (Reports to the Local Government Board on Public Health and Medical Subjects. New series. No. 4) by Dr. J. M. Hamill on "facing" and other methods of preparing rice for sale by the use of adulterants. It has been ascertained by the authorities that rice millers are generally not content with the appearance given to rice by ordinary mechanical methods of treatment, but endeavour to improve upon it in various ways by the use of extraneous substances during or subsequent to the milling. Talc or kindred substances are used to impart a high polish or glaze to the grain; pigments of various kinds are sometimes brought into requisition in order to modify its colour; and oil may be employed to increase its translucency. The use of talc (French chalk) or steatite in the form of a fine powder is particularly common. It is generally mixed with glucose, glycerine, and starch paste before it is applied to the rice, and sometimes also with mineral oil. This glazing mixture forms an exceedingly thin coating on each grain and ensures the adherence of talc in sufficient quantity to give the required degree of lustre. Rice has normally a creamy white colour; but a demand has been artificially created for a rice of dead whiteness, and this is attained by the addition of blue pigments, either mineral or organic, during the milling process. Ultramarine is most commonly used, but Prussian blue is also employed, or at least was used until quite recently. Amongst the organic pigments indigo has been used, but at the present time the aniline blues of one kind or another are in favour. Rice in the natural condition varies considerably as regards its translucency, some varieties being very opaque. This opacity can be greatly modified by treatment with oil, whereby the grain obtains a dull, pearly translucency which has been found to prove attractive to many rice consumers. For this purpose a vegetable oil, such as arachis oil, is used to some extent; but as oils of this nature have the disadvantage of easily becoming rancid, a mineral oil or petroleum is more generally preferred. In discussing these commercial methods of treating rice as a possible danger to health, Dr. Hamill admits that minute amounts of talc, colouring matter, or oil may not do any harm; but he points out that the presence in this food of comparatively large quantities (such as 1 to 2 per cent.) of insoluble and possibly irritating mineral matter might in some circumstances be deleterious, particularly to infants or invalids.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Dudley.—The medical officer for Dudley (Dr. J. W. Wilkinson) in his annual report states that the death-rate for 1908 was 15.28 per thousand of the estimated population, and that it is the lowest rate ever recorded in the borough. The death-rate from the seven principal zymotic diseases was only 1.0 per thousand. The infantile mortality-rate again showed a marked improvement upon previous years. The birth-rate was 30.26, and showed a slight falling off as compared with that of 1907, but was not, however, so low as in 1906, when it was 29.73. An enormous amount of work had recently been carried out by the chief sanitary inspector in getting houses connected with the deep drainage system, and it had been fraught with much difficulty, owing to the expense entailed upon property owners. During the year 520 houses have been provided with proper drainage, and the water carriage system applied to 828. The medical officer speaks very highly of the admirable work which is being done in this direction to improve the health of the borough.

Herefordshire Combined Districts.—The report of Dr. Herbert Jones, medical officer of the Bromyard, Dore, Hereford, Ledbury, Leominster, and Weobley rural districts, relates to a scattered and slowly decreasing population, estimated to number 51,168 persons in the middle of last year. The birth-rate per 1,000 of population was only 21.5, as against 26.2 in rural district England and Wales as a whole. Calculated, however, on the number of women between the ages of 15 and 45, the difference between the Herefordshire and the general rate would appear to be trifling. The death-rate was 13 per 1,000; it was lowest at Bromyard (10.7), and highest at Weobley (14.6). The infant mortality-rate was only 62 per 1,000 registered births. Dr. Jones makes no comment on this fact, which, however, is remarkable testimony to the value of the work done by him.

We gave some account of it last year, when the infant mortality was likewise much lower than the average figure for rural England and Wales. The secret seems to lie in the extent to which village nurses are used and the care which is taken by Dr. Jones to see that they are properly instructed and their work duly supervised. It is noteworthy likewise that the death-rate amongst illegitimate children in this area was not only exceedingly low in itself—namely, 57 per 1,000—but lower than the death-rate amongst legitimate children, whereas all over the country it tends to be both actually and relatively very high. The number of such births was also greater in proportion to the population than is usual throughout the country, and this fact, taken in connexion with the low death-rate amongst illegitimate children, perhaps represents a local attitude towards the subject which renders it comparatively easy for unmarried mothers to pay an adequate amount of attention to their children. The phthisis death-rate averaged 1.07 per 1,000, which is somewhat less than that of rural England and Wales in 1907, but considerably higher than the rate for the previous ten years in this particular district. The cancer-rate was 1.36, which again is much higher than the record of the previous ten years. Indeed, nearly 1 in 10 of all the deaths in the district seem to have been due to this disease. The same volume also includes particulars concerning the Bromyard Urban District, of which Dr. Jones is likewise medical officer. It has a population of 17,204, and its corrected death-rate 16.7, or 3.7 per 1,000 higher than in the combined rural area surrounding it. The only circumstances which would seem to explain this difference is the number of persons per acre; in the combined rural districts it is 0.13 per acre, and in the Bromsgrove Urban District nearly 9.

Merton Urban District.—Merton is a rapidly increasing district, which until the end of 1907 was included within the area of administration of the Croydon Rural District Council. In 1901 it had a population of 4,500 persons, and in the middle of 1908 this had increased to 12,550. The birth-rate during the year was 28.1 per 1,000, the death-rate 7.9 per 1,000, and the infantile mortality-rate equal to 48 per 1,000 births. The rural isolation hospital is still used by the newly formed urban district, and in 1908 as many as 85 per cent. of the cases of diphtheria were removed there, while only 3 of the 18 scarlet fever patients and only 1 of the 4 typhoid patients were nursed at home. The importance of this can be better appreciated when we learn that nearly all the houses in the district are let on weekly rentals. The medical officer of health (Dr. D. A. Belilios) has drawn up a very useful pamphlet, which was delivered at every house in the locality, giving appropriate advice for the prevention of summer diarrhoea among young children. In 1908 only five deaths were registered as due to this disease.

Borough of Bath.—The population of Bath at the census of 1901 was 49,839, or some 2,000 less than the number recorded at the previous census. Estimated by the Registrar-General's method, the population of the city at the middle of 1908 would be 48,751, but Dr. Symons is of opinion that there may have been an increase since the last census and not a decrease. For statistical purposes, therefore, he estimates the population at 50,000, or the same number as in the three previous years. This cannot be considered satisfactory and emphasizes the importance of enumeration more frequently than every ten years. The death-rate during 1908 was 15 per 1,000 of the population and the infantile mortality-rate equal to 87 per 1,000 births. The birth-rate was 19.5 per 1,000 of the population at all ages, compared with 26.5 per 1,000 in England and Wales. This very low birth-rate is more apparent than real, for, calculated as it should be, and as Dr. Symons has, it is equal to 207 per 1,000 married women between the ages of 15 and 45 years. In 1907 the ratio in the whole of England and Wales was 215.6. It is a pity that more medical officers of health do not adopt this method of calculating the legitimate birth-rate. There are 28 private slaughterhouses in Bath, 26 of which were established before 1847. It is satisfactory to find that 3 slaughterhouses which were of a very bad type have been acquired by the corporation. A health resort with the reputation of Bath ought to have a public abattoir, for the difficulties attending the proper supervision of the 28 private slaughterhouses must be almost insurmountable.

RESIGNATION OF MEMBERS OF BOARDS OF GUARDIANS.

LIBRA.—There is no fine on resigning the office of Poor Law guardian. The question of resignation is a matter solely to be dealt with by the Local Government Board, and any application from a guardian to resign has to be sent to that Board by the applicant, and reasons given for wishing to resign office as guardian. It is not essential for a guardian to resign before becoming a candidate for a paid office under his board, but in the event of his being elected to any such office he would be disqualified from serving as a guardian.

BY-LAWS OF LOCAL AUTHORITIES.

5825.—Section 87 of the Local Government Act, 1894, reads as follows: "All such by-laws, orders, and regulations of any authority whose powers and duties are transferred by this Act to any council, as are in force at the time of the transfer, shall, so far as they relate to or are in pursuance of the powers and duties transferred, continue in force as if made by that council, and may be revoked or altered accordingly."

Letters, Notes, and Answers.

BRITISH MEDICAL ASSOCIATION AND BRITISH MEDICAL JOURNAL.

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CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

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In order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL, and not at his private house.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

HYPERTRICHOSIS asks for the best treatment for temporary alleviation and permanent cure of trichosis, abundant and downy, on a lady's upper lip.

PRACTICE IN NEW ZEALAND.

L. J. asks for information as to the best means of obtaining a good and reliable partnership practice in New Zealand, with proper facilities for a thorough investigation.

DISTURBED NIGHTS.

NIGHT BIRD writes: When called up at night I often find I cannot get to sleep again and am done up next day. Can any one suggest the best stimulant (non-alcoholic) to take on these occasions to induce sleep? It must be a common experience with others.

CANCER OF BLADDER.

DR. J. BURTON CLELAND (Chief Secretary's Department, Bureau of Microbiology, Sydney) writes: I am anxious to find out a reference to malignant disease (? papillomata) occurring in the urinary bladder of workers in one of the coal-tar dye industries, fuchsin workers, I believe; it may be possibly, however, in indigo workers. I am unable to come across it in the literature available in Sydney.

INCOME TAX.

PERPLEXED has been asked by the surveyor of taxes to furnish particulars of his takings and working expenses for the years 1907 and 1908. As his income tax for those years has been paid and the return for this year sent in, he wishes to know whether he is bound to go to the trouble of furnishing the particulars.

*** The object of the surveyor of taxes in applying for this information is doubtless to verify the amount returned as to the liability for the current year. This return should have been made on the average profits of the three years 1906, 1907, and 1908, and from the fact that the request does not extend to the profits of 1906 it is assumed that the figures for that year have previously been furnished, or that the practice is a new one. Our correspondent is not bound to furnish the information at the request of the surveyor, but it will probably save him trouble in the long run to do so, inasmuch as the surveyor's object is presumably to ensure that a correct assessment shall be made. It is possible that non-compliance with the request may result in an estimated assessment being made by the Income Tax Commissioners, in which case the full details will be insisted on in connexion with the consequent appeal.

A. S. inquires as to the income tax liability in regard to quarterly instalments paid in respect of the purchase price of a practice.

*** The quarterly instalments in such a case do not represent income to the recipient any more than would the payment of the whole purchase price in one sum. The instalments should accordingly not be returned by the recipient for assessment to income tax. So far as the purchaser is concerned, the quarterly instalments must be regarded entirely as capital outlay, and no deduction should be made on account of them from his receipts in arriving at the profits to be returned for income tax purposes.

ANSWERS.

HOSPITAL WALLS AND FLOORS.

DR. W. B. PARSONS (London) writes, in reply to "Savage" (p. 1520), to recommend Paripan, the South African agents for which are Messrs. Fraser and Chalmers, Ltd., Johannesburg. It presents, he says, a smooth and highly-glazed surface, is durable, and can be washed with ordinary antiseptics without deterioration.

STUDY OF EYE DISEASES.

POST-GRADUATE would probably find that the best place for studying eye diseases for the F.R.C.S.Edin. would be the special eye hospitals of London or Edinburgh. Of the Continental schools, for one who speaks German, Vienna or Freiburg, and one who speaks French, Paris or Brussels are probably the best for the purpose. Freiburg and Brussels are fairly cheap to live in, and the teaching of Axenfeld at Freiburg is excellent.

BRONCHOSCOPY.

DR. WILLIAM HILL (London) writes: Dr. Charles W. Chapman will find the information he requires as to the value of the bronchoscope in the diagnosis of intrathoracic tumours in Chevalier Jackson's monograph on *Tracheobronchoscopy, Oesophagoscopy, etc.* (St. Louis, 1907), in which there is a bibliography of 358 references. He might also consult the article on bronchoscopy in *Allbutt's System of Medicine*, vol. iv, part 2.

*** Dr. Jackson's book was reviewed in the JOURNAL, 1908, vol. i, p. 1236.

STALE ASPARAGUS.

CAPTAIN E. BLAKE KNOX, M.D., D.P.H., R.A.M.C., writes: I was much interested in "A. L.'s" query about gastro-intestinal irritation due to eating stale asparagus (p. 1520 of June 19th) as I have had exactly the same personal experience. In two cases which I have recently seen severe diarrhoea occurred in each and vomiting in one; the symptoms closely resembled ptomaine poisoning and I made a very careful investigation and analysis of the food taken prior to the illness. Pieces of blackened asparagus fibres covered with stringy mucus were passed in the stools, and these, no doubt, were the causal agent, as all other food taken was proved to be absolutely above suspicion. The asparagus was described as slightly flabby before being cooked. I have seen similar cases occurring from eating stale spinach. Perhaps the method of applying liquid manure to these vegetables has something to do with the formation of poisonous bodies when they get stale. I believe asparagus, like seakale, is often grown in beds covered by manure mixed with ash-pit refuse, which from its heating properties forces growth. As the contents of many ash-pits contain putrifying animal matter, the presence of ptomaines on the surface of these vegetables can be easily accounted for.

LETTERS, NOTES, ETC.

ANIMAL PARASITES.

PROFESSOR M. BRAUN and Dr. M. LÜHE (Königsberg) write: In your issue of May 8th you publish a review of Braun and Lühe's *Leitfaden zur Untersuchung der tierischen Parasiten des Menschen und der Haustiere*, in which your reviewer expresses himself as follows: "A glance at the general style, printing, diagrams, and text of the work shows at once that it is based upon, or might even be termed, a synopsis of Braun's well-known work." Then he censures one of the authors for "considerable changes introduced into the old and time-honoured classification of the protozoa." It is rather hard to understand how this both can be true. Indeed, a glance at the table of contents shows at once that Braun's former work and the work under discussion are quite different from each other, the one detailing the parasites of man and their life-histories, the other the methods of obtaining, preparing, preserving, and examining parasitic material. Both intend to supplement each other. No less than 23 of the 100 illustrations of the *Leitfaden* are wanting in Braun's former work, and the readers will judge whether the new work is really a "synopsis" of the former or a "practical companion" to it, as we may describe it. Moreover, it is not possible to accept your statement that considerable changes are introduced into the classification of the parasites. The most important of these so-called changes, the inclusion of the haemoflagellates and haemosporides in a single order, is introduced by Hartmann two years ago, and the paragraph of the work under discussion dealing with this question is concluded as follows: "Although this basis of classification is not, as yet, accepted by all authors, it is expedient to the present purpose to class the blood parasites together, more particularly as the method of examination is the same in both cases." It is to be regretted that the "glance" which your reviewer bestowed upon the text of this work was of so cursory a nature, and that he should have so wholly mistaken both its intention and its scope.

*** It is not unusual for authors, if a book be unfavourably criticized, to suggest that the reviewer has not read or has only glanced at it, but we cannot accept the insinuation in this case. The resemblance between the volume under notice and Braun's well-known work in style and text is close, and we calculate that 73 of the 100 diagrams in the new book are the same. Neither can we accept our correspondents' opinion as to the classification adopted; the fact that "the method of examination is the same in both cases," ought not, in our opinion, to be made the basis of classification.

HUNGER PAIN OF DUODENAL ULCER.

O. I. writes: I have followed the discussion on this subject with unusual interest, having been myself a sufferer at intervals for the last four years. About three years ago I consulted a physician of some note, who diagnosed "hyperacidity."

I had grave doubts as to the correctness of his diagnosis, and from more than one article which I had read in the JOURNAL about that date on the subject of duodenal ulcer I was convinced that such was the cause of my symptoms.

As a small boy I had suffered occasionally from heartburn, accompanied by acid eructations. Since then, till about four years ago, I had no stomach troubles. About the date mentioned I began to feel pain in the region of the stomach, which I could only describe as cramp. It came in paroxysms. Beginning with the slightest degree of discomfort, it steadily increased in intensity until it reached its height, and then as steadily decreased in severity till it disappeared, the whole time occupied being about 10 to 15 seconds. After an interval of about half a minute another paroxysm occurred. These continued regularly for about an hour. Each paroxysm was rather more severe than its predecessor, until a certain stage was reached, and then they began to taper off gradually until they entirely ceased. These attacks came at first only about 9 or 10 p.m.

A mouthful of undiluted whisky caused eructations, and was speedily followed by complete relief at first, but soon failed to act with the same efficiency, and was consequently stopped. By and by these symptoms began to occur during the day, but almost invariably several hours after a meal, and the taking of food always brought relief. At a later period the trouble only occurred during the night. At the height of an attack exceedingly tough mucus was rapidly secreted from the fauces—so tough, indeed, that it could not be swallowed, although there was a constant desire to do so. It had to be hawked up vigorously, and on spitting it out it clung to the lips, forming a rope of mucus 3 ft. or 4 ft. long. This is an invariable accompaniment of these attacks, and one which I have not seen mentioned by any of your correspondents.

When an attack was unusually severe, it usually terminated rapidly with pyrosis. The pain was not on any occasion what one might call *acute*.

Diet did not appear to have any marked influence in bringing on an attack. The appetite has remained good throughout. In corroboration of my own diagnosis I once observed a loose motion which had every appearance of melaena.

With regard to the cure of this condition in my own case I have some doubts. During the last eighteen months I have had only two periods of a very few days each, of any degree of severity, although I have occasional twinges to remind me of the past.

Regarding the treatment I have adopted, it may be of interest. After the whisky failed to give relief, I tried dieting and various remedies without much success till I used liq. potassae ♏ xv to xx, with the same quantity of tinct. rhei. co. in water, taken whenever the pain threatened, and continued for a few days before meals. After two or three days this treatment has never failed to bring about complete relief which has continued for considerable periods of time. I may say that I was led to adopt the above treatment on the assumption of hyperacidity.

Some of your correspondents have referred to recurrences after apparent cure. Has anyone observed anything approaching seasonal periodicity? On reflection, it appears to me that my attacks have usually occurred during the summer months.

A WARNING.

OUR attention has been called to a case in which a medical attendant on a family was asked by one of the junior members to sign a declaration in order that he might obtain a Foreign Office passport. This was done without the practitioner making any special inquiries, since he knew the family well, and had no reason to suspect the individual member making the application. The passport was duly granted. Our correspondent recently received a letter from the Foreign Office reprimanding him for signing the application and reciting a series of convictions against the individual to whom the passport was issued, he having served various terms of imprisonment. We therefore venture to warn medical practitioners against signing any forms for patients without making full inquiry.

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AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

1. Duodenal Ulcer in the First Decennium.

L. KUTTNER (*Berl. klin. Woch.*, November 9th, 1908) records the details of 2 cases of duodenal ulcer in children. The first case was that of an infant of some 30 days, who suffered from diarrhoea and vomiting from the seventh day of life. On the ninth day the stools were stained with blood, and on the thirtieth day a profuse bleeding took place, which led to death within a short time. The only signs made out during life were meteorism, enlargement of the liver and spleen, and pallor. *Post mortem*, a round duodenal ulcer was found. The second patient was 4 years of age. The abdomen was distended, the spleen and liver were enlarged, the stools contained mucus and blood, but no dysentery bacilli or amoebae could be isolated. Coli bacilli were found in large numbers in the stools. On the sixth day after admission a fatal profuse haemorrhage from the bowel took place. *Post mortem*, three round duodenal ulcers were found, as well as a parenchymatous nephritis. Kuttner calls attention to the fact that duodenal ulcer is in reality much more common than is usually supposed. He cites from Moynihan, who has operated on 114 cases during the last seven years; Mayo Robson, who has performed gastro-enterostomy 66 times for this condition; and William J. and Charles H. Mayo, who performed 188 operations for duodenal ulcer. Krug of Kiel found duodenal ulcers in 53 bodies out of 12,020 *post mortem*. Other surgeons and pathologists have brought forward observations in support of the frequency of these ulcers. Collins found duodenal ulcer 42 times in children under 10 years of age. Of these, 17 occurred in infants under 1 year. The condition, however, must be regarded as uncommon in children. With regard to the pathology, Landau ascribed the ulceration to a thrombosis of the umbilical vein and embolus of the vessels of the small intestine, leading to local necrosis. The author considers that in elder children the etiology may include plugging of vessels and digestion of the tissue shut off by the plugged vessels. The large majority of the cases show ulcers in the first part of the duodenum, just below the papilla. The association between nephritis and duodenal ulcer is recognized. Kuttner passes on to a brief discussion of those cases in which the duodenal ulcer follows on burns of the skin. He is not inclined to ascribe any etiological rôle to the burns, but regards these cases as coincidences. Of more probable causal nature is the occurrence of pseudo-membranaceous colitis. The action of *Bacillus coli communis* in producing gastric ulcer has been proved experimentally by Fenton Turk. The appearance of the ulcer in his second case, however, led Kuttner to believe that the *Bacillus coli* had not produced it, but that it was a peptic ulcer. He regards his cases and those of other authors as warnings to surgeons to think of duodenal ulcer in infants and young children. Anaemia of unknown origin and occult bleeding from the bowel should be regarded as a possible result of this condition. If the diagnosis can be made, the condition should be treated just like gastric ulcer. When vomiting and haemorrhage is present, rectal feeding should be employed for a time. Infants do quite well on Fuhrmann's enemata of mother's milk. Alkalies, including carbonate of magnesium, liquor calcis, Carlsbad water, bismuth preparations and styptics may be required. Poultices should not be applied when haemorrhage is present; icebags applied to the epigastrium can be substituted in these cases. He has no experience of operative treatment in young children and infants, but sees no reason why this should not be successfully carried out. Profuse haemorrhage occurring suddenly excludes operation, as death usually takes place within a few hours at most.

2. Radical Neuralgias.

VERGER (*Gaz. Hebdom. des Sci. Méd.*, July 5th, 1908) recommends progressive doses of opium in the treatment of neuralgias referable to the nerve roots. Such neuralgias include most of the sciaticas and nearly all cases of brachial neuralgia. The symptoms in both upper and lower limbs consist of spontaneous pain, day and night, with increased paroxysms, either spontaneous or excited by movements such as coughing; and, objectively, zones of diminished or increased cutaneous sensation, not corresponding to the region of any given nerve, but taking the form of bands, parallel to the axis of the limb, and varying according to the nerve roots affected. A negative characteristic of these affections is the absence of the painful points of Valleix, so that they can easily be distinguished from other neuralgias of a peripheral origin. From an etiological point of view they may be divided into two groups. In the first group the neuralgia is a sort of precursor of some affection of the meninges of the medulla or cord. Pott's disease, hypertrophic meningitis, vertebral cancer, or meningeal tumours, such as sarcoma; and symptoms, definitely medullary, or pointing to implication of the anterior roots, soon appear. In the second group the neuralgia proceeds from a radical affection, to some extent primitive, such as compression by plaques of syphilitic meningitis, or an inflammation which may be toxic or infectious; and then the neuralgia may present the characters of a specific malady. The diagnosis is difficult at first, the bilateral nature not being always an indication of a grave lesion. But in both groups the prognosis is always doubtful, because, apart from the possibility of very serious ulterior symptoms, radical neuralgia is particularly obstinate, except in cases which yield to antisyphilitic remedies. Local treatment is of no use in essential neuralgia, and surgical interference is apt to fail, division of several nerve-roots having resulted in no improvement in the hands of M. Chavannaz. Verger, in three well-marked cases of radical neuralgia of the limbs, has employed with success the treatment with progressive doses of opium, used by Trousseau for epileptiform neuralgia of the face. In order to obviate the risk of constipation, Verger prescribes a pill containing 2 centigrams of extract of opium with 5 milligrams of belladonna extract. Beginning with five pills a day, he increases the doses by one every second day, until a decided improvement takes place. After about fifteen days of the maximum dose the amount is gradually diminished. Verger's cases comprised an old woman, a young girl, and a man of 44; the first two were cured, and the third, who suffered also from diabetes, was greatly relieved. The maximum doses required were 18, 22, and 24 centigrams respectively. He has never found any serious inconvenience from the treatment, and the relief afforded has been previously sought in vain by means of other remedies. He considers the internal administration of opium preferable to the injection of morphine.

3. Personal Identification.

TAMASSIA (*Gaz. degli Osped.*, August 2nd, 1908) has been working for some years on the dorsal veins of the hands as a means of personal identification. As is well known, these veins differ considerably not only in different people but also in the two hands of a single individual, and it is this marked difference and variability which the author proposes as a means of identification. The veins are rendered prominent either by letting the hand hang down for some time or by applying a ligature, and then the hands are photographed. The surface is a fairly large one, the differences considerable, easily photographed, and require no elaborate measurements or delicate apparatus to register; and even if one right hand may resemble another, it is pretty certain that a right and left hand of any given subject would differ from any other right and left hand. The author describes six chief types:—(1) The arch, used in a general and rather wide sense; (2) the arteriform distribution; (3) the reticulate type; (4) an arrangement like the letter V; (5) like two Y's placed side by side; (6) a mixture of these various groups. The last group is perhaps the commonest arrangement. Whilst the author does not wish to disparage the numerous data furnished by Bertillon's method and by Galton's finger-tip impressions, he believes insufficient attention has been directed to this simple method of identification by means of the dorsal veins of the hands. These veins remain pretty much the same throughout life, and cannot be altered by disease or by intentional fraud, or at least cannot be altered in such a way as to impair their value as marks of personal identity.

4. Prognosis of Diabetic Retinitis.

ROCHOU-DUVIGNEAUD (*Journ. des Prat.*, July 11th, 1908) points out that in certain cases the differential diagnosis of diabetic retinitis and albuminuric retinitis rests much more upon the result of urinary examination than upon the

retinal changes. In both there are vascular and blood lesions, white fibrinous effusions, and haemorrhages. In a case of Bright's disease the appearance of albuminuric retinitis indicates a grave prognosis, and generally speaking its appearance means the entry of the last stages of the disease. If one excepts the short periods of amaurosis of uraemic origin one finds that very few patients suffering from Bright's disease become blind, as they die before the retinitis has seriously affected their vision. In diabetes there may be seen in the retina numerous white spots surrounding or occupying the region of the macula; discrete haemorrhagic points, especially at the periphery; numerous haemorrhagic patches often associated with oedema which partially separates the retina; haemorrhages invading the vitreous and giving origin to cicatricial strings which separate the nerve layer and may cause complete blindness; thrombosis of the central vessels; haemorrhagic glaucomatous lesions causing blindness, and according to the localization and intensity of the lesions, so may the affection of vision be either slight or complete blindness may ensue. Diabetic patients may live for a long time after their sight has been lost, and the prognosis of retinal affections in diabetes is certainly less grave, both as regards the eye and also as regards the duration of life. In some cases the retinal changes have retroceded and good vision has been recovered, whilst in others death has occurred soon after the appearance of retinal changes.

SURGERY.

5. Surgical Treatment of Phosphorus Necrosis.

LEVAI (*Pester Mediz. Chirurg. Presse*, September 6th, 1908) states that among 1,500 persons engaged in Austria in the manufacture of phosphorus matches 250 cases of phosphorus necrosis occur yearly. This disease is not the effect of local irritation, nor does it find its entrance solely through the medium of decayed teeth. It occurs in workmen with perfect teeth, and in one case a regenerated maxilla containing no teeth was attacked. On the other hand, some workers with very defective teeth have worked for many years in a phosphorus manufactory without developing necrosis. Phosphorus attacks the organism as a whole, and affects other bones besides the jaw. A phosphorus worker of 40 broke two ribs after an insignificant blow and twice fractured his forearm. A forty-year-old packer broke her femur four times in three years. (None of these patients had syphilis.) In 11 cases Levai examined histologically the removed bone, and in two cases portions of bone chiselled out of the sound maxillae, and found that the endothelium of the blood vessels of the bone is diseased in those who have worked for a long time with phosphorus. This makes the bones brittle, and as thrombus formation readily occurs in diseased vessels, predisposes to necrosis. To cause such a predisposition four or five years' systematic employment in a phosphorus-containing atmosphere is sufficient, and, once it exists, a worker cannot avoid his fate, even by giving up his injurious occupation. Levai urges the importance of early operation. Waiting for the formation of an involucrum is accompanied by a mortality of at least 21 to 22 per cent. The early operation is fraught with hardly any danger, and, even if the operation is not sufficiently radical, the mere removal of dead bone makes the patient's condition more tolerable. Death usually occurs with obstruction of a whole branch of a vessel at once throughout the whole thickness of the bone, so that the necrosis quickly spreads. Even if an involucrum forms, it is imperfect and dies subsequently. After an early operation the periosteum left behind is adapted to new bone formation, and good functional and cosmetic results are attained where the whole maxilla is removed, especially when, directly after the operation, a provisional substitute for the jaw is inserted. Substitutes made of tin are best; strong wire may be used. Caoutchouc is bad for aseptic reasons. Levai always carries out the operation from the oral cavity, partly from a cosmetic point of view, partly because when the mouth is opened from without the wound renders nourishment exceptionally difficult. In these weakened patients good nourishment is of the greatest importance. In slight degrees of necrosis Levai operates under a local anaesthetic; with far-reaching necrosis, under the morphine-ether narcosis. After removing the loose teeth, he makes an incision along the edge of the sockets reaching to the bone—around the dead bone this is easy—and resects in healthy bone. When the larger half of the maxilla is dead he removes the whole bone at once, as his experience shows that when half of a jaw-bone is dead the other part dies shortly after. When the incision is carried at once down to the bone and the periosteum pushed back from the entire bone haemorrhage is usually insignificant. In the after-treatment frequent irrigation of the mouth is necessary; he uses a 2 per cent. boric acid solution. Levai gives notes of 7 cases of very successful operations exhibited before the Buda-Pesth Medical Society in 1907.

6. The Treatment of Burns.

RENNER (*Zentralbl. f. Chir.*, No. 30, 1908) reports that in the treatment of burns of all degrees he has obtained much success from the use of a powder made up by one part of subnitrate of bismuth to two parts of kaolin. The burnt surface, after it has been thoroughly cleansed, is covered by a thick layer of this powder, over which is bandaged a layer of sterilized gauze, the whole being finally covered by thick layers of wadding. This dressing is changed every day so long as there is much discharge, the injured area being submerged in a partial or a complete bath, according to the extent and the situation of the burn. This powder, the author states, is a very active absorbent, and speedily takes up fluid from the burnt tissues, which are converted into a black and desiccated eschar. In burns of a mild degree the area, after the use of the powder, is covered by a thick crust, which serves as an excellent protection during the growth of the new epidermis. By this treatment, for which are claimed the advantages of simplicity and cheapness, together with the capacity of arresting free secretion and preventing septic infection, pain, it is asserted, is relieved and the temperature kept down. In some few cases there has been an urticarial rash with much itching around the burn, but this, the author states, soon disappears after a temporary suspension of the use of the powder.

7. The Surgery of Pancreatic Contusions and Fistula.

PICQUÉ (*Rev. de Gynéc. et de Chir. Abdom.*, July–August, 1908) reported a case of partial removal of the pancreas. A boy, aged 13, was knocked down, and a cart wheel passed over his abdomen. Signs of localized peritonitis developed above the umbilical level, but not until the third day. Picqué opened the abdomen and discovered a retrogastric haematoma, in the midst of which lay the pancreas, with its tail completely detached and beginning to slough. He removed it and packed the cavity which had contained the effused blood with gauze. The boy recovered, but a pancreatic fistula developed; it closed spontaneously, however, in a few weeks. Injuries confined to the pancreas are not frequent. Picqué has collected 20 cases; 14 underwent operation (suture or tampon), 10 recovered. Fistula nearly always follows these procedures; it heals up spontaneously and heals quickly, provided that the patient is submitted to an antidiabetic treatment. Schwartz, in discussion, related another case of contusion of the pancreas treated by the tampon; a fistula developed as usual, but closed spontaneously. Regnier stated that he successfully treated a case of pancreatic fistula following contusion of the abdomen by antidiabetic diet. Tuffier cured, by enforcing that diet, an obstinate case of pancreatic fistula following an operation on the stomach. Two other pancreatic fistulae following complicated surgical procedures on the stomach healed spontaneously.

OBSTETRICS.

8. Criminal Abortion.

H. MARX (*Berl. Klin.*, May 18th, 1908) propounds a question of ethics: Should a medical man who is called in to attend a case of criminal abortion notify the police of the nature of the case? The medical man is never compelled to do so in Germany, and in most cases he would not be justified in violating professional secrecy. Dr. Marx, however, believes that there are cases in which the medical practitioner would have solid excuse for so doing. He quotes the following illustration: The patient died, but before death told the doctor the name and address of the washerwoman who had procured abortion for her. The doctor considered it to be his duty to denounce the woman, in the interest of the public. The majority of abortionists are women, and have a regular plan of campaign in their business. First they try the so-called abortifacients, which are very rarely successful. Next baths, massage, and douches are employed. Marx finds that the only certain drugs for the induction of labour or abortion are phosphorus and mercuric chloride, and both of these usually kill the

mother as well as the child. As the mild expedients rarely lead to the termination of the pregnancy, the patient is then subjected to instrumental interference, which takes the form either of the passage of a catheter or sound or the injection of a fluid. In Berlin the latter is more common, and frequently takes the shape of a soapy solution. The medical man is at times asked in a court of law whether this or that internal remedy is capable of terminating a pregnancy. While it cannot be denied that at times one or the other may succeed, there is no doubt that nearly all the drugs used by these women are inert. Very hot vaginal douches may succeed, but the temperature of the water for this purpose must be at least 104° F., and the fluid must be directed immediately towards the os uteri. When an abortion has taken place the medical man may be asked whether a manipulation which can be proved to have been resorted to can be made responsible for the effect. The time elapsing between the manipulation and the abortion is important. From twelve to twenty-four hours is the usual interval between the interference and termination of the pregnancy. A not uncommon trick of abortionists is to advise the patient to fall after the uterine injection has been carried out. In discussing a case in which the prisoner was charged with procuring criminal abortion with an instrument, and in which the defence raised was that the patient "overreached" herself in taking a book off a bookshelf, Marx points out that the argument which he used in court was that no one could believe that if a spark were thrown into a barrel of gunpowder, and then a sharp knock was given to the barrel, the explosion could be due to the knock. When death follows abortion in response to acute sepsis, one is justified in assuming that the abortion was criminally procured. Quacks rarely realize the normal anteflexion of the uterus and wounds perforating the vagina or cervical canal are not infrequent. Sudden death may take place in connexion with induced abortion. He cites the case of a "masseuse" who succeeded in separating a six months ovum from the uterine attachments and caused a small superficial wound in the mucous membrane. The ovum was intact. Death took place from an air embolus. Death from scalding also may follow the manipulations of these abortionists. The diagnosis of pregnancy and abortion after death is easy, if the case is recent and the insertion of the placenta is still visible. In late cases, it may, however, be extremely difficult. The presence of decidual cells and of a corpus luteum in the ovary may assist the diagnosis. During life the diagnosis of a pregnancy which has been interrupted by abortion is made forensically as the diagnosis of pregnancy is ordinarily made in practice. It must be remembered that an abortion can take place without the destruction of the hymen. In conclusion, he finds that in towns the induction of abortion is relatively common, while in the country districts child murder is relatively frequent, and therefore abortion is proportionately rare.

GYNAECOLOGY.

9. Vaginismus and Appendicitis.

RICHELOT (*Bull. et Mém. de la Soc. de Chir. de Paris*, November 3rd, 1908) discussed at length the etiology of vaginismus at the October meeting of the Société de Chirurgie de Paris. He pointed out that the local irritation theory was faulty. In many cases the mucosa and integuments are found to be quite sound, free from fissures and ulcers, and not subject to the irritation of any vaginal or uterine discharges; on the other hand, women with eczema and other causes of irritation in the vulvo-vaginal region often tolerate coitus without ever suffering from true vaginismus, even when connexion is actually painful. The neurosis theory is probably correct. Richelot reports a case in which the patient was a woman, aged 28, married for five years. She had been troubled for fifteen years with a complication of objective and subjective symptoms. At first mucous enteritis set in, and was followed by obstinate constipation, chlorosis, mental depression, and loss of will power. At last, when Richelot examined her, he found all the evidences of chronic inflammation of the appendix. The patient had never been able to submit to complete coitus. The vagina and vulva showed no morbid appearances, but introduction of the finger caused great pain. Richelot removed the vermiform appendix, which he found buried in adhesions connecting it with the caecum, and filled with small stercoral calculi. He did not operate on the vulva. After convalescence the patient's health steadily improved, and at the end of two years the bowels were regular without drugs, and all neuroses had disappeared. But the vaginismus ceased when the operation was performed, for when the patient returned to her home coitus was from the first quite practicable without the least pain. In discussing the case, Lucas-Championnière agreed with Richelot's opinion on the two theories. Local irritation did not necessarily cause vaginismus, and was not invariable in cases where that affection was present. Distant sources of irritation, on the other hand, were often to be defined. After ovariotomy and hysterectomy vaginismus was not rare. Lucas-Championnière in 1879 performed Porro's operation on a dwarf—one of the earliest instances where mother and child were saved. The artificial menopause did not cause much general disturbance, though there were periodical haemorrhages from the lungs and rectum, and the patient was able to work for her living; but coitus, which she sought eagerly as there was no more chance of the perils of maternity, became impossible on account of the most severe vaginismus. Lucas-Championnière examined the vulva and could find no erosions.

THERAPEUTICS.

10. Treatment of Pancreatitis.

DR. DREESMAN (*Med. Klinik*, October 4th, 1908) considers operation the only effectual method of completely eliminating the pancreatic secretion, which is being abnormally distributed to the body, as soon as possible. Acute pancreatitis, untreated, is undoubtedly, with rare exceptions, fatal. Death is the direct or indirect result of the action of the pancreatic ferment upon the tissues, acting either directly upon these or being carried thereto by the blood or lymph vessels. In exceptional cases cure by means of conservative, purely symptomatic treatment (washing out the stomach, irrigation of rectum, administration of oleum ricini) is not possible; the hopes raised of immunization by means of trypsin and by serumtherapy have not yet been realized. Dreesman recommends opening the omental cavity through the gastro-colic ligament. The cut should be between the ensiform process and the navel, or a little more to the left, according to the site of the greatest sensitiveness to pressure or resistance. A blood-stained peritoneal exudate, if incarceration or mesenteric thrombosis can be excluded, signifies in all probability pancreatitis and justifies opening the omental sac. The inflamed gland and peritoneum should only be incised when the pancreas is much swollen, and its peritoneal covering uninjured, otherwise severe haemorrhage, only controlled with difficulty, may result. A suspected focus of suppuration may always be punctured. Dreesman recommends drainage by gauze plugs down to the surface of the gland, which can be changed several times a day, and if the secretion is very great (for example, $\frac{1}{3}$ litre or more) a drainage tube in addition. Washing out the abdominal cavity is not recommended unless the patient's condition, especially the pulse, is good, which is not generally the case; the mesentery is, in these cases, moreover, very easily torn. Drainage of the bile duct may be useful, even in the absence of gall stones, when the gall bladder contains abnormal bile resembling tea. As Robson recommends, calcium chloride is useful in lessening haemorrhage, and may be given in doses of 2 to 4 grams thrice daily for one to two days before the operation, and 4 grams thrice daily by rectal injections, after the operation, for two days. If in eight to fourteen days a fistula has formed, a tube usually suffices for drainage. Action on the skin may be prevented by antiseptics (airol, viroform), and in one case Burmeister used a special aspirating pump with success. The diet should be regulated. Secretion from the pancreatic fistula is very profuse after carbohydrates, is less after albuminous foods, ceases after fatty diet, is excited by hydrochloric acid, and is hindered by sodium bicarbonate. Of 118 cases, taken from the literature, in which an operation was undertaken, including Dreesman's 5 own cases, 40, it appears, were treated with tamponade of the pancreas; of these only 8 died (20 per cent.). Recovery took place in 53 of the 118 cases, mortality being 55 per cent. In chronic pancreatitis special diet and administration of pancreas preparation are useful. Schmieder recommends iodide of patassium; Robson, in cases of obstinate constipation, calomel, followed by saline purges, and later by bismuth subnitrate and small doses of opium. In many cases operation becomes necessary, on account of great emaciation or pain, and its nature will depend on the cause of the pancreatitis. When dependent upon cholelithiasis, its most frequent cause, cholecystotomy or cholecystenterostomy should be undertaken.

11. Treatment of Neurasthenia.

A. D. ROCKWELL (New York *Med. Record*, December 5th, 1908) discusses the treatment of true neurasthenia—not the condition of autointoxication often called by that name, and resulting from too much eating and insufficient exercise. The symptoms of the disorder are, he says, astonishingly numerous, while the patient may appear in good general condition. It is important to distinguish between hereditary and acquired neurasthenia. In hereditary cases slight irritations will produce severe symptoms. Neurotic and hereditary instability is an important factor in prognosis and etiology. A typical neurasthenic is easily affected by alcohol. One important causative factor in men is sexual excess out of wedlock. Neurasthenia is rare in persons suffering from grave organic diseases. In many cases rest is not as good treatment as occupation. When there is cerebral excitement with physical exhaustion rest is imperative. For lithaemics who suffer from autointoxication work is a good remedy. The use of few drugs is indicated. When any are given, the bromides are useful to calm irritation. Electricity is the best remedy for the neurasthenic. Light and heat are also valuable. An intelligent encouragement and control of the patient are essential. Sympathetic consideration must be shown for his symptoms.

12. Isopral in Cardiac Affections.

PETERS (*Deut. med. Woch.*, October 29th, 1908) discusses the value and advisability of administering isopral to patients suffering from various forms of cardiac disease. In referring to the literature on the subject, he finds that certain clinicians have expressed the opinion that isopral is endowed with a toxic effect on the heart. This he denies. Actual reports of cases in which isopral is supposed to have produced undesirable actions on the circulatory system are few, and most of these, he thinks, can be explained without difficulty. The symptoms complained of were in all cases symptoms which could readily arise in the course of the disease which was being treated, and he therefore objects to assigning the cause to the drug which was given. He has given isopral in a number of cardiac patients, and has not met with any toxic effects either on the cardiac nerves, or on the vascular system, or on the blood pressure. The heart itself is not attacked by this drug, nor have any deleterious effects been noticed in any of his heart patients during the exhibition of the drug. In cases in which salicylate of sodium was not well tolerated he obtained a good pain-relieving action from isopral. He therefore recommends isopral as a safe hypnotic, which can be given even in advanced heart disease.

PATHOLOGY.

13. Rhythms of Growth Energy in Mouse Cancer.

G. N. CALKINS (*Journ. of Exper. Med.*, May, 1908) holds that three factors must be taken into account in considering the continued propagation of cells in experimental mouse cancer. In addition to (1) the inherent capacity for division of the cancer cells, and (2) the natural resistance of the inoculated animals, there is a third factor which he describes as "the potential of infectivity of the cancer cells." This third condition is characterized by more or less regular rhythms, rhythms distinguishable from the rhythms of growth energy of the cancer cells which in all probability occur within the individual mouse. Cancer cells differ from epithelial cells by virtue of this potential of infectivity combined with that of division energy, the latter quality being attributable to the action of stimuli and not to the liberation of a restrained growth power of embryonic tissue. Infectivity distinguishes all cancerous growths from normal epithelium and from benign tumours or teratomata. "The rhythms of infectivity of cancer cells . . . appearing as they do in successive batches of mice which we may legitimately assume to have like powers of resistance, must have their cause in the cancer cells themselves. These cells, therefore, must be equivalent to parasites, or else parasites are contained within or associated with them." It is suggested that there may be some organism which, acting like *Plasmodiophora brassicae* within vegetable cells, underlies the infectivity of cancer cells, and provides the stimulus for their continued proliferation. This is the assumption which will best explain the numerous cases of cage infection. This mysterious organism, like the organism of yellow fever, may reside within the cell protoplasm but be too small to be recognizable by the microscope. Calkins also suggests that the spirochaetes often found in mouse cancer may have something to do with the disease. They may prepare the soil for cancerous growth, or they may have intracellular stages in their life-history which are too minute to be seen.

14. Prevention of Tropical Abscess of the Liver.

LEONARD ROGERS (*Archives of Internal Medicine*, June, 1908), from a seven years' exceptional experience of this disease in Calcutta, has arrived at the conclusion that tropical abscess of the liver can be prevented by the early diagnosis and treatment of the presuppurative stage of amoebic hepatitis. In a series of papers published in the BRITISH MEDICAL JOURNAL between 1902 and 1906, the author has traced the relationship between tropical abscess of the liver and amoebic dysentery, and the good effects of the treatment of acute hepatitis by large doses of ipecacuanha, and of abscess by aspiration and injection of bi-hydrochloride of quinine. Although large doses of ipecacuanha are commonly given in cases of amoebic dysentery complicated by hepatitis, the author advises this treatment for hepatitis when not accompanied by dysentery, and the considerations which led him regularly to adopt it are the finding of dysentery associated with 90 per cent. of tropical abscesses of the liver, and the fact that in many patients dying from liver abscess, without history or symptoms of dysentery, amoebic ulcers are found *post mortem* in the upper part of the large bowel. He therefore regarded hepatitis accompanied by leucocytosis as an indication of the presence of latent amoebic ulceration of the large bowel, which indicated large doses of ipecacuanha for its cure. The results of the treatment have been so successful that during the last two years no instance has occurred of abscess developing while the patient was in the European General Hospital, Calcutta. The drug is given in 30 grain doses, twenty minutes after a dose of tincture of opium, no food or drink being given for several hours before and after the dose. This is in order to avoid vomiting. It should be given daily at first, and continued at increasing intervals for at least two weeks. There is as a rule ample time for the diagnosis by blood examinations to be made, and the ipecacuanha administered before the formation of an abscess, as the presuppurative stage is never less than two weeks, and extends to a month in about 50 per cent. of cases.

15. Haemolytic Reaction of Blood Serum in Malignant Disease.

W. FISCHEL (*Berl. klin. Woch.*, May 4th, 1908) states that Kelling read a paper at the German Surgical Congress in 1906 on a new haemolytic reaction of blood serum of persons suffering from malignant tumours, and drew diagnostic and statistical conclusions from his observations. Kelling believes that the cell acts as a parasite in cancer, and that a specific haemolytic power is present in the serum for blood corpuscles of animals of other species. Other workers have studied this problem. Von Dungern subjected the arguments to a severe criticism, and concluded that Kelling's reaction was worthless. Rosenbaum found that Kelling's reaction proved positive in 54 per cent. of cancer cases affecting the gastro-intestinal tract, and from this he considered that the matter should be studied more closely. The American observers have found that a haemolytic action is present. Weil found that the serum of dogs with tumours almost always revealed a powerful haemolytic action toward the blood corpuscles of healthy animals of all species; that the blood corpuscles of these dogs resisted solution by serum more than the blood cells of normal dogs; and that the serum of dogs which had no tumours rarely possessed any haemolytic action. The author set himself the task of examining the position of Kelling's claims, and summarizes the results which he obtained as follows: The blood serum of many patients suffering from malignant tumours possesses a marked haemolytic power toward the blood cells of various animals. The haemolytic reaction is, however, not specific for the blood cells of a particular species as Kelling assumed. The haemolytic reaction is not specific for malignant tumours. It occurs in other diseases, notably in pernicious anaemia and tuberculosis. He details the scope and type of his experiments and shows that his conclusions are justifiable as a result of his observations.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

16. Vasomotor-trophic Neuroses.

IN dealing with the prognosis and treatment of vasomotor-trophic neuroses, Cassirer includes acroparaesthesias, Raynaud's disease, erythromelalgia, sclerodermia, sclerodactylia, and Quincke's fugitive oedema (*Deut. med. Woch.*, October 29th, 1908); he, however, recognizes many transition forms and cases in which it is impossible to define the disease by any one name. At times these vasomotor-trophic neuroses appear as accompaniments of other nervous complexes. The facts that in these neuroses a common localization is met with and that the sensory and secretory disturbances are more prominent than the motor disturbances speak for a common factor of the etiology. He regards all the diseases grouped in this way as manifestations of disturbances of the sympathetic system. They are, further, all functional nervous disturbances. For this reason the application of the word "neurosis" is justified. All the forms tend to manifest themselves in periodic attacks. The prognosis, taken generally, is good as far as life is concerned, and also as far as the transition to organic nervous disease. The course is, however, generally an obstinate one. General lines for treatment can be set up on the basis of the common factors of these conditions. Everything should be done to oppose the development of the inherited or acquired neuropathic diathesis. The individual measures are best dealt with separately for each disease. Acroparaesthesias are characterized by unpleasant, irritating, and even painful sensations in the fingers, hands, and forearms, accompanied by the phenomenon of "dead fingers." At times cure occurs; but, inasmuch as this form usually accompanies general nervousness and not infrequently arises as a climacteric phenomenon, the majority of the patients do not get better. The treatment consists in avoiding all conditions which might lead to nervous symptoms, and especially avoiding the touch of cold, wet objects, cold water, etc., as well as all forms of over-exertion. Faradic hand baths do good, as do galvanic baths, and Swedish gymnastics at times yield good results. Raynaud's disease is characterized by the appearance of symmetrical superficial dry gangrene, chiefly affecting the nose, fingers, ears, chin, and toes. Ulceration near the nails and what are known as local syncope, local asphyxia, and local rubor are seen. Great pain often accompanies this form. The prognosis is doubtful, although the disease can scarcely be said to threaten life. In the treatment the alleviating of pain is usually the first duty of the physician. Pyramidon, opium or morphine are the best drugs for this symptom. Electricity offers a useful action of the process. Dry heat and massage as well as passive movements are useful in many cases. The gangrenous parts should not be removed surgically too early, and even if no operative treatment is undertaken, the resulting scars are often much smaller than would be expected. Local hyperaemia has yielded quite good results in recent times. Tonics and good food are necessary. Amyl nitrite and adrenaline have proved disappointing. Erythromelalgia is characterized by redness and pain in a limb or portion of a limb. It is a rare condition. As a rule the affection, unlike Raynaud's disease, is not symmetrical. The treatment is purely symptomatic and consists in raising the limb and applying cold. Sclerodermia and sclerodactylia may be treated in a similar manner to Raynaud's disease. Fugitive oedema is a much more important and complicated condition than is usually supposed. The swelling attacks the mucous membranes, the muscles, the joints, the tendon sheaths, and probably the serous membranes, the meninges, etc., as well as the skin. The symptoms are therefore different according to the site of the oedema. When the larynx is attacked, the case may end fatally, but, as a rule, life is not endangered. The prognosis is bad or doubtful as far as complete recovery is concerned. The treatment consists in regulating the diet and motions of the bowels. Quinine is much recommended, atropine at times appears to do good, and arsenic also may be of value when the other drugs fail. The itching requires special treatment and the tendency to vomiting may even call for morphine.

17. Lobar Pneumonia.

NORRIS (*Amer. Journ. of Med. Sciences*, November, 1908) deduces some valuable observations from a study of the statistics of 445 cases of lobar pneumonia admitted to the Philadelphia General Hospital during a period of nearly three years, starting from the time of the inauguration of the fresh-air treatment, with a resulting decrease in mortality. The male patients were isolated in a special ward in which the windows were constantly kept wide open regardless of weather or temperature, whilst the females had, from lack of room, to be treated in the general wards with only the ordinary ventilation, but the statistics of the two sexes have been kept separate. Compared with statistics compiled some years previously and prior to the adoption of the fresh-air treatment the mortality showed a decrease of 10 per cent. for the males, while the mortality in the case of the females was nearly double that of the males. Besides the constantly-open windows and doors therapeusis was largely symptomatic in character, delirium and insomnia being treated with bromides, opium, etc., and asthenic cases with strychnine, caffeine, ammonia, digitalis, etc. The use of alcohol is deprecated, since the drug does more to relax the vasomotors than to stimulate the heart, and its use appears to be gradually falling into disfavour. Cold-water sponging was frequently used, and found to be most beneficial, not so much in reducing temperature as in toning up the vasomotor system. Digitalis was largely used, though in febrile cases it is of practically no value. Of complications, *acute pericarditis* occurred in 8 cases, all of them fatal, and this incidence of pericarditis corresponds very closely with the experience gathered from a study of the general literature. *Acute endocarditis* occurred 3 times, and all the cases terminated fatally. There were 2 cases of *empyema*, giving 1 recovery and 1 death. *Pulmonary abscess* occurred in 2 instances, with 1 death. There were 3 cases of *meningitis*, with 2 deaths; and *acute arthritis* occurred 3 times, with 2 fatal cases. *Otitis media* was noted in 6 cases, of which 1 died, and *parotitis* was recorded once, with recovery. *Acute peritonitis* was only met with once, ending in death, and *acute colitis* occurred in 4 fatal cases. Albumen was present in 78 per cent. of the cases, and a clinical diagnosis of *acute nephritis* was recorded in 16 of the cases, 14 of which ended fatally. With regard to the fresh-air treatment, the author considers that anyone who has the courage to try it will never abandon it, since his experience shows that its use gives a greater sense of well-being to the patient as well as a decreased mortality, and this without any deleterious effects.

SURGERY.

18. The Surgical Aspects of Ionic Medication.

TUFFIER (*Bull. et Mém. de la Soc. de Paris*, No. 33, 1908) gives the results of a careful study he has made, from both experimental and clinical points of view, of the method of electrical iono-therapy or ionic medication, in regard to its probable value in surgical practice. This method, the principles, indications, and technical details of which have been fully described by Dr. Lewis Jones (*Proc. Roy. Soc. Med.*, vol. i, No. 5), aims at the removal of subcutaneous lesions by driving medicinal chemical substances through the healthy skin into the deeper tissues by electrical means. The substances which can be used in this treatment act on the deep tissues differently and much more efficiently, it is held, when introduced by electrolysis than when they are applied by the simpler process of hypodermic injection. The diseases in which ionic medication has hitherto been found useful are rodent ulcer, local septic conditions, warts, and lupus; it has also been tried with promising results in cases of chronic arthritis and of neuralgia. Although many powerful agents—such, for instance, as iodine, chlorine, chloral, phenol, and alcohol—are not available for this treatment on account either of loss of their properties when in the ionic form, or of insolubility or incapacity of dissociation when dissolved, there are, Dr. Lewis Jones has pointed out, a very large number of active substances which can be used. The agents most likely to be found of service are not only inorganic salts, but also such useful organic compounds as quinine, cocaine, strychnine, adrenalin, and salicylates. Tuffier, who describes in the first place some experiments with a stained solution of nitrate of silver, states that there can be no doubt that

chemical substances may by the aid of the continuous current be introduced beyond the healthy skin, and there be absorbed more or less rapidly. It is not quite clear in the author's report how far such solutions may be driven, but much stress is laid on his conclusion that their penetration is superficial. It is certain, he states, that the medicinal agents cannot pass beyond the cutaneous covering, and whatever the modifications effected in the concentration of the employed solution, and in the electrical intensity, he has never succeeded in reaching the subcutaneous cellular tissue. The author confirms the previous observations that the action of chemical substances on the subcutaneous tissues is influenced by their mode of introduction. Trypanroth, when injected in a 1 per cent. solution by the usual method of injection, forms an unstable combination with the cellular protoplasm, and is speedily dissolved and removed. On the other hand, when introduced by the action of the electric current, the particles of colouring matter are closely combined with the cells of the dermis, and are rendered less soluble. These experimental results serve to explain the observations of some authors that substances introduced by electrolysis pass much less slowly into the urine than those introduced by way of the stomach or by subcutaneous injection. Tuffier has obtained good results from the ionic treatment in painful affections of the surface of the body, as, for instance, facial neuralgia. He failed in two cases of epithelioma of the face, and is disposed to think that penetration is more difficult through cancerous than through healthy tissues. His experience of salicylic ions in the treatment of chronic joint affections has not been very favourable. In some cases relief certainly followed the introduction of these ions, but it was found that equally good results could be gained in similar cases by using as electrodes simple water or chloride of sodium. In two cases in which the ionic method was practised with good results for supposed ankylosis, the articular weakness and rigidity were found to be really due to pain localized to the surface of the joint. Under the influence of the electric current the pain in both cases ceased, and the subjacent joint, which was quite healthy, very rapidly regained its normal motility. In reviewing the results of his experimental and clinical work on this subject, the author concludes that the benefits of ionization should not be exaggerated, and that it is necessary in regard to this method to consider two very distinct actions. In the first place there is the assured medicinal action which is absolutely restricted to the skin, but which, thanks to the more or less soluble combinations formed in the cellular protoplasm, may have such special effects that, even if electricity does not carry the therapeutical agent to the diseased part, it does not follow that the electrolytic introduction is incapable of aiding in certain cases the good effects of the current. The second action, which is due to the biological phenomena produced under the influence of the current, is independent of the solution employed, owing to the osmotic action excited by the displacement of the ions of the organism.

OBSTETRICS.

19. Gangrene of Leg from Thrombosis in Pregnancy.

JARDINE (*Journ. Obstet. and Gynaec., of the British Empire*, March, 1908) reports a case of a woman who had excellent health during her pregnancy until within a fortnight of term, when she began to suffer from cramp in her right leg and foot, alternating with sensations of tingling and numbness. Six days later the pain was so great as to necessitate injections of morphine, and the foot and leg were white and cold, no pulsation being felt in the tibial arteries. The heart sounds were slightly roughened in the aortic area, but otherwise pure. Labour commenced eight days after the onset of these symptoms; the child, which was delivered with forceps, was hydrocephalic, and did not survive. The puerperium was practically uneventful, but the gangrene of the leg progressed steadily, and ten days later she was transferred to the care of the surgeon, who amputated just below the trochanter. All the vessels in the face of the stump were thrombosed, and only the femoral artery and vein were tied. No tourniquet was used, but the abdominal aorta was compressed during the operation. Subsequently the patient experienced severe pain in the left foot and leg, and the pulsation of the tibial arteries, and later of the femoral in Scarpa's triangle, could not be felt. The flap also became gangrenous, and the covering of the stump was destroyed. The patient refused to have any further operation to remedy this. The circulation in the left limb had recovered and the foot was warm when the patient left the hospital. The cause of the thrombosis is not clear; the cardiac lesion was of the slightest, the process of blocking seems to have been a gradual one of some weeks' duration, although the pain only became marked a few days before admission to the hospital. It is unlikely that the hydrocephalic condition of the child should have had any bearing on the condition.

GYNAECOLOGY.

20. Cancer of Stomach Secondary o Cancer of Fallopian Tube.

EVERKE (*Monatsschr. f. Geb. u. Gyn.*, October, 1908) removed a right Fallopian tube subject to primary cancer, in February, 1902. The patient was 46; she had suffered from purulent vaginal discharge shortly after marriage, but had borne two children afterwards, her last confinement being twelve years before the operation. She consulted Everke for bloody discharge, and he detected a tumour of the size of a fist, apparently in the parametrium. It proved to be an adeno-carcinoma of the right tube which had invaded the parametrium and adhered to the rectum and sigmoid flexure. The tube, healthy at its uterine end, was removed, the uterus sutured to the parietes, and a wound in the rectum made during the separation of the tumour closed by suture. In September, 1903, dyspeptic symptoms set in and a tumour the size of a goose's egg was detected in the epigastrium. It was a cancerous growth in the stomach, and proved fatal by March, 1905—a month over three years after the operation.

THERAPEUTICS.

21. Heart Stimulants.

HORATIO C. WOOD, Jun. (*Amer. Journ. of Med. Sci.*, November, 1908), confines his remarks to the digitalis group of drugs. There are three factors in the action of these which are of clinical interest. These are (1) the cardio-inhibitory action, prolonging the diastole and slowing the pulse; (2) the tonic action on the heart muscle, making the systole more powerful and complete; and (3) the vaso-constrictor action. The slowing of the pulse-rate is the most important part of the action of digitalis, because this is brought about by the prolongation of the diastole. With a prolonged diastole the ventricle becomes more completely filled, and so, from the very beginning of the systole, the cardiac contraction is occupied in sending blood out into the vessels, and no part of its power is wasted in contracting down on to the contained blood, as when it is partially empty to begin with. Economy in the work of the heart is in this way effected, a point of much importance in cases of chronic heart disease where it is essential to make the burden of the feeble heart as light as possible. The importance of the tonic action on the heart muscle lies in the fact of its preventing this muscular relaxation during the prolonged diastole from going on to permanent dilatation. These effects are produced mainly on the left ventricle; so that in some cases of mitral regurgitation with much hypertrophy of the left ventricle it may happen that the action of this chamber is so disproportionately strengthened that the left auricle and right ventricle are relatively weakened, and may dilate before the powerful regurgitant stream from the left ventricle. The vaso-constrictor action is less harmful than is often supposed. It keeps up the pressure in the aorta, on which depends the filling of the coronary arteries, and consequently the nutrition of the heart. It is harmful when, from degeneration or other causes, the cardiac muscle is too scanty to respond to the tonic action of the drug. With regard to the various members of the group, squills and apocynum are of restricted usefulness from their irritant action on the kidneys and stomach; strophanthus has less tendency than digitalis to produce a cumulative toxic effect, though its action on the vessels is, in spite of what is widely believed, the same as that of digitalis; adonidin appears to act on the heart in a similar way to digitalis, but relaxes the coronary arteries. The author considers digitalin, digitalein, and digitoxin, the so-called active principles of digitalis, unsatisfactory. Experimentally, they are none of them found to produce the characteristic therapeutic effects of the drug, while digitoxin possesses the cumulative toxic properties to a marked degree.

PATHOLOGY.

22. Infection Path of the Tubercle Bacillus.

REICHENBACH (*Zeit. f. Hyg.*, Bd. 60, H. 3) studied the relative probability of alimentary and inhalation infection. It has been shown that both alimentary and inhalation infection are possible, but nothing has been done to show the relative probability of the two modes of infection. A suspension of known strength was prepared; part of it was used for feeding experiments and the other part for spray infection. The quantity used in spraying and feeding was then estimated in relation to the minimal fatal dose. For feeding experiments 140 millions were necessary, whilst spraying only required 40,000. This was the number used in producing the spray. Corrections based on the data of other observers were then made for the number of bacilli which were not inhaled at all and for the inhaled bacilli which never reached the lungs. Only one-thirty-fifth could have been inhaled, and of these only one-third ever reached the lungs. Applying these corrections we find that 367,000 times the inhalation dose is required to produce an alimentary infection. These results were obtained with the guinea-pig. With goats, being unable to get sufficient animals, he never reached the non-lethal inhalation dose, but he was able to show that the inhalation dose was at the most only one-five-hundredth the alimentary dose. Using smaller doses, repeated fifty times, he found that the minimum for the guinea-pig was 800,000 for the alimentary dose. To exclude lymphatic absorption from the nose he did some controls with the nostrils plugged. The results were identical.

23. Etiology of Tuberculosis.

ALEXANDER (*Zeit. f. Hyg.*, Bd. 60, H. 3) experimented with the rabbit to investigate (1) the susceptibility to the different modes of infection, and to (2) the two types of bacilli. The human bacilli were obtained from sputum by filtration, then enumerated and control experiments were performed with guinea-pigs to show that inhalation of 50 bacilli uniformly caused a fatal tuberculosis. The results on the rabbit were: (1) *Minimal active dose*—(*a*) For *inhalation:* Human bacilli, 50,000; bovine, 100. (*b*) For *feeding:* Human type, quite inactive; bovine, 50 mg., in five doses of 10 mg. (*c*) For *intravenous injection:* Human type, 50,000; bovine, 50 bacilli. (2) *Maximal inactive dose*—For *inhalation:* 25,000 and 50,000 respectively; for *feeding:* 180 mg. and 50 mg. respectively; *intravenously:* 8,000,000 and 5,000 respectively. The qualitative results are also interesting. Subcutaneous infection with human virus is rarely fatal, whilst with bovine virus it is uniformly fatal in two to three months. Intravenous injection with human virus (1 mg.) is rarely fatal, but when the animal is killed in three months there is found a slight pulmonary lesion without any glandular infection. An intravenous injection of $\frac{1}{100}$ mg. bovine virus causes a general tuberculosis, fatal within five weeks. He concludes that in rabbits inhalation is more fatal than feeding, and that this applies to both strains of bacilli. The bovine type is much more fatal to the rabbit than the human type.—Reichenbach and Bock (*Zeit. f. Hyg.*, Bd. 60, H. 3) discuss the permeability of the intestine towards the tubercle bacillus. Previous experimenters have obtained positive results, but Reichenbach and Bock claim that these results are invalidated for practical purposes by some unnatural conditions. The bacilli have been given in huge doses, or the stomach tube has been used, or the blood vessels have been opened up in making an artificial gastrostomy, or the intestines have been injured by large doses of purgatives, or the animals had been starved for a long time. They avoided all these sources of error, and used quantities of bacilli which were accurately estimated. Oettinger has shown that when bacilli are introduced into the venous circulation they are not, as some have assumed, retained in the lungs as in a filter, but that most of them are found in the liver. Hence, when bacilli are found in the lungs and not in the other organs, the presumption is that they have been inhaled and not that they have arrived there from the blood. Sublethal doses of bacilli were used in most experiments. The dogs took the bacilli suspended in cream, the guinea-pigs in turnip mash. They were killed by stunning, and in removing the lungs every care was taken to avoid opening the oesophagus, as this was found to invariably result in contaminating the lungs. In 1 dog, out of 4, bacilli were found in all the organs. Out of 27 guinea-pigs, bacilli were found in the organs of 2 only, and this occurred when a dose above the fatal alimentary dose had been given. They conclude that the alimentary canal is not permeable to the tubercle bacillus, and that this fact is the only satisfactory explanation of the vast discrepancy between the alimentary and inhalation doses necessary to produce infection.—Ballin (*Zeit. f. Hyg.*, Bd. 60, H. 3) answers the theories of the Lille school that foreign bodies, such as bacilli, cannot reach the lungs by inhalation but only after absorption from the alimentary canal. He also determined the part of the lungs, the finer bronchi or the alveoli, in which bacilli were detained. He used the spores of an easily recognizable mould. The spores were blown into the air and breathed by guinea-pigs, which were killed at different intervals after the inhalation. With *Aspergillus fumigatus* spores the results were as follows: After inhalation for half an hour the animals died from dyspnoea in seven or eight hours. The lungs were filled with haemorrhagic foci. Spores were found in smears and in plate cultivations from the lungs. Microscopically they could be seen in the alveoli and smaller bronchioles. Smaller doses were used. After three hours the spores were found in the alveolar walls as well as in the alveoli. After six hours they were almost all within the alveolar wall. After longer intervals they were proliferating and finally there was cellular infiltration. *Aspergillus niger* was then tried as it was less injurious. The results were similar, but there was less inflammatory reaction. With the harmless spores of *Penicillium glaucum* identical results were obtained in so far as the spores passed into the alveolar wall just as rapidly. Control feeding experiments were performed. The animals were fed on large quantities of the spores for seven to fourteen days, but the spores could not be found in the lungs, either by cultivation or by simple microscopical examination.—Heymann (*Zeit. f. Hyg.*, Bd. 60, H. 3) examined the lungs of guinea-pigs at different intervals after the inhalation of known quantities of tubercle bacilli. In a first series of researches the portions of the lungs to be examined were inoculated into a second series of animals. After inhalation of 10,000 or 100,000 bacilli the bacilli could be demonstrated in the most peripheral parts of the lungs after *one hour*, whilst they could be found in the glands only after three days. After inhalation of 1,000,000 the bacilli could be demonstrated in the lungs and in the bronchial glands from the first. Using microscopical methods alone, he could demonstrate bacilli only after inhalation of 1,000,000. After two hours they were found in the epithelial cells of the finer bronchioles, in desquamated alveolar epithelium, in the alveolar wall, in the epithelioid cells under the bronchial epithelium, and, rarely, free in the alveoli. It is noteworthy that he rarely found them inside the leucocytes, either free in the alveoli or in the alveolar wall.—Oettinger (*Zeit. f. Hyg.*, Bd. 60, H. 3) discusses the predisposition of the lungs to tuberculosis. Whether the infection be due to intravenous or to alimentary infection the disease is usually in the lungs. The mechanical explanation that the lungs act as a filter has not been satisfactorily demonstrated. Vansteenburgh's experiments, where he found carbon particles in the lungs after feeding on soot through a stomach tube, are rejected on account of the difficulty of avoiding inhalatory contamination in this method. *A priori*, there are objections to this mechanical explanation, for the lung capillaries are very wide, and the velocity of the blood in the lungs is very high. It has been shown that intravenous injection of carbon particles leads to pigmentation of the liver and spleen as well as the lungs. Oettinger injected small quantities of different organisms into the aural vein of rabbits, killed the animals, and then estimated the number of bacilli in the different organs by rubbing up a small portion of the organ in broth and plating. In order to imitate the natural conditions of rupture of a tuberculous gland into a vein, he also used an agglutinated culture of *B. typhosus*. In all cases he found that by far the greater part of the bacilli were found in the liver. With the agglutinated organisms he found a much larger proportion of them in the lungs, but never so many as in the liver. He next attempted to obtain roughly quantitative results with tubercle, using inoculation of a second series of guinea-pigs as a quantitative test. He showed that the bacilli were found in all the organs, but as he never reached the sublethal dose his results here are incomplete. Having thus shown that mechanical factors will not explain the predisposition of the lungs to tubercle, he calls attention to Neumann and Wittenstein's work. These investigators injected dogs intravenously with tubercle bacilli, killed the dogs, and then estimated the infectivity of the lungs and other organs (1) immediately after death, and (2) after the same organs had been kept for twenty days. In the first case all the organs were infectious, but after twenty days all but the lungs were harmless.—Kölisch (*Zeit. f. Hyg.*, Band 60, H. 3), noting that other investigators had obtained conflicting results from experi-

ments on the inhalation of dried sputum dust, performed some very careful quantitative experiments. He knew the amount of air inhaled in a given time by a guinea-pig. Then, using some easily recognizable spores which could be cultivated and enumerated on plates, he placed a guinea-pig in an infected atmosphere for a certain time, killed it, and estimated the number of spores in the lungs. This number is called L. From the same atmosphere at the same time he sucked the same amount of air as would be breathed by the animal through a filter paper, and then estimated the number of spores on the filter paper (Number F). With great care he found the ratio L : F fairly constant. It varied from 4 to 10 per cent., the average being 7 per cent. Findel, working with a moist spray, had found the ratio to be about 33 per cent., showing that moist bacilli were more readily retained than dry ones. With some dust from a local cotton factory he then made a mixture containing known numbers of both spores and tubercle bacilli. Thus 8 grams of dust contained 90 million spores and 11 million tubercle bacilli to the cubic centimetre. With this mixture he performed fifteen experiments. From the above data he was able to determine that number of bacilli which, inhaled with dust, were sufficient to cause an infection. It was found that to get constant results it was necessary to use 300 to 400 bacilli. In one case a dose of 50 was sufficient. With the moist spray 50 bacilli are always fatal, whilst 5 or 6 are often fatal. With dried sputum dust mixed with dust from a dwelling he found that the dose was 300 to 4,000 bacilli, whilst the same sputum used for a spraying experiment gave uniform infection after the inhalation of 50 to 60 bacilli. It seems probable that bacilli inhaled with dust are more readily removed by the cilia of the bronchial passages. Natural conditions were then imitated. Guinea-pigs were placed in a cage at different heights from the floor, some sputum rubbed up with street dust to a fine powder was then placed on the floor and stirred up with a broom every ten minutes for half an hour. Most of the animals suffered from pulmonary tuberculosis. Kölisch thinks that these conditions were, however, worse than ever obtained in a dwelling. He wished to try the effect of letting the animals inhale the dust in a dwelling where there was promiscuous expectoration. Thanks to the spitting regulations, he was unable to find such a house in Breslau. Experiments with the dust from very dirty houses were negative, even after two hours' inhalation. He concludes that infection from the inhalation of infected dust is possible under certain conditions—namely, dryness of the dust and inhalation of very large quantities.—Ostermann (*Zeit. f. Hyg.*, Bd. 60, H. 3) deals with the question of *contact infection*, especially in children. Tuberculosis in the first year is very common. Direct infection through kissing and "dummies" is not probable, owing to the spread of the knowledge of the infectious nature of tubercle. Great importance has been attached to the so-called "Schmutz" or smut infection. The child in crawling about contaminates its fingers and transfers the bacilli to its mouth. Ostermann carefully investigated the conditions in the houses of twenty infected families where the conditions were exceptionally bad even for Breslau, a very dirty town. Of 42 children examined bacilli were found (by injection of washings into guinea-pigs) in 4 only. Examination of the floors gave results in 50 per cent. He thinks this proportion very small when the extreme filthiness of the houses is taken into consideration ,and in connexion with other researche s by fellow-workers thinks that they indicate the rarity of "Schmutz" infection. Investigating adults, he examined the hands of 14 consumptives, finding the bacilli on 7; also on the hands of one healthy nurse. Are these transferred in handshaking, etc.? The spores of a harmless saprophyte were rubbed on the hands of one person and allowed to dry. His own thumb was then rubbed on the infected palm, the organisms washed off his thumb and plated. At the most only 1 out of the 700 spores were transferred. A rich tuberculous sputum was then dried on one hand and a second hand vigorously rubbed on the infected hand. The washings of the second hand were injected into guinea-pigs with negative results in every case. Is the nose or mouth likely to be infected from the infected second finger? A finger-pad was infected with a known number of spores, then immersed with a slight rubbing movement in broth, which was subsequently plated. The time of immersion was found to be a most important factor. For one second 1 to 500, 1 to 343, 1 to 9, and 1 to 8 were the maxima in a series of experiments. He sums up the possibilities of contact infection in adults as follows: There might be a thick layer of dry sputum on a consumptive's hand; a healthy person by a long and heavy grasp might transfer some to his own hand; he might then suck it off his fingers into his mouth—all remotely possible but highly improbable. In a second paper Ostermann discusses the danger of milk infection. By inoculating guinea-pigs with varying dilutions of milk from cows with udder tuberculosis, he estimated that the worst "single cow" milk he could find had about 10 to 20 bacilli in $\frac{1}{50000}$ c.cm. One such cow in a herd would cause the milk to contain at least 1,000 bacilli to the cubic centimetre. That this is an extreme case is shown by the fact that only 10 per cent. of the market milks are infectious to guinea-pigs. With 1,000 bacilli to the cubic centimetre in the milk, the butter from the same herd would contain about 100 to the gram. Is such milk dangerous to the human child when taken into the alimentary canal? Findel, Reichenbach, and Alexander have determined the minimum fatal alimentary dose for the guinea-pig; 140,000,000 is the minimum for the guinea-pig when taken in one dose; when the dose is repeated fifty times the minimum is 800,000. Then assuming the consumption of 1 litre of milk with 1,000 bacilli to the cubic centimetre, we get a daily dose of 1,000,000, which is harmless in a single dose, and only just on the borderland of danger when fed to a very susceptible animal like the guinea-pig. The butter would certainly be harmless. He concludes that the danger from milk is very slight. He does not claim that dairy inspection is unnecessary (he admits its necessity for other reasons), but he claims that we must not expect great improvements from these measures alone. They will do harm if they lead to the neglect of other more important measures.—Bruno Heymann (*Zeit. f. Hyg.*, Bd. 60, H. 3) discusses the relation of infant's tuberculosis to milk. His arguments are derived from statistical and ethnographic data. The cases of infection of wounds from bovine tuberculous products, although many have been recorded, are not of importance. Compared with the frequency of opportunities for infection they are very rare. As regards primary intestinal infections, these are very rare, according to many leading German pathologists. The English statistics which make it much commoner are not reliable, for many cases of enlarged mesenteric glands are not tuberculous, yet are, he claims, counted as such. The English and German commissions, who were specially looking for bovine cases, isolated altogether 271 strains, of which only 39 were bovine. Gaffky, out of 57 consecutive cases in children, found only 2 which were bovine. Beitzke, in 25 cases of children's tuberculosis, found 2 bovine. All pulmonary cases are due to the human bacillus, and, when it is remembered that in Germany there are 108 deaths due to pulmonary tubercle to 10 from tubercle in other organs, the overwhelming importance of human sources of infection is manifest. Investigation of families where tuberculous milk has been consumed for long periods fails to make out a case for the bovine bacillus. Out of 53 cases there was found 1 case of undoubted bovine infection and 3 very doubtful ones. Raw has stated that in countries with a large consumption of raw milk there is an increased incidence of surgical tuberculosis, which he assumes to be due to the bovine bacillus. Heymann criticizes this argument from two standpoints: (1) Most surgical tuberculosis is of human origin. Oehlecker investigated 50 consecutive cases of surgical tuberculosis, and found only 4 to be of bovine origin. (2) He quotes some countries where no milk is consumed but tuberculosis is common. *Japan:* (Kitasato) *Perlsücht* only introduced thirty years ago, whilst tubercle is very common. Children never get milk, yet alimentary tuberculosis is very common. *Greenland:* No tuberculous milk, yet phthisis very common, and tubercle meningitis one of the commonest causes of death in children. *Asiatic Turkey:* Raw milk never drunk even by adults, children breast-fed for two years; tuberculosis of all kinds very common and very virulent. *Roumania:* Children breast fed for a very long time; tuberculosis very rife even in regions where there is no milk at all. *Faroe Islands: Perlsücht* only introduced a few years ago; tubercle of all kinds very rife for a long time. Out of 342 cases the infection could be traced to human infection in 262. *Egypt:* Milk so dear that it is a luxury to the rich; tuberculosis very common, especially amongst the negroes and Berbers. It is only necessary to see one Berber expectorate to understand why it spreads so well. *Gold Coast:* Children breast-fed or on a concoction of palm oil; tuberculosis of all kinds rife. Heymann comes to the conclusion that the great prevalence of human tubercle cannot be due to *Perlsücht*, but must be due to some other cause, and that our endeavours to combat the main source of infection must not be abated by a sense of security based on rigid milk and meat inspection.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

24. Pressure Pain, a Symptom of beginning Consumption.

THE pathological increase of the painful sensation on pressure is a symptom which K. Francke (*Beit. z. Klin. d. Tub.*, vol. x, No. 3, 1908) wishes to employ in the diagnosis of the early stages of pulmonary tuberculosis. He has directed the attention of clinicians to this phenomenon in an article entitled "Algeoscopy" in 1901, but up to the present but little attention appears to have been paid to the subject. He points out that since the lung tissue itself is poor in sensory nerves, it cannot be expected that inflammation of the lung in itself will produce pain. Tuberculosis of the lung usually begins at the apex, close to the pleura, and the inflammation passes over to the visceral layer of the pleura at an early stage. Soon the parietal layer is affected; roughness of the surfaces follows and friction is produced. Adhesions are not uncommon and these give rise to dragging. In this way pain is produced in connexion with early pulmonary tuberculosis. Based on his observations made in the *post-mortem* room, he states that the beginning of the lesions is to be found behind and close to the top of the apex, and not in front. In the early stages pain in this situation is rarely spontaneous, and is not severe. Pain on sneezing, coughing and breathing speak for advanced lesions. However, pain is experienced in the earliest stages when the part affected is pressed upon. The cause of the pain may, of course, be something else besides tuberculous pleurisy, but the differential diagnosis is not difficult. He finds that there are three methods of utilizing pain diagnostically: (1) observing if the patient complains spontaneously of pain; (2) questioning whether he has pain; and (3) testing for pathological pain pressure areas. For the early diagnosis of consumption only the third method comes into account. Pressure on normal tissue is not painful or even unpleasant, while it becomes definitely painful when the tissue pressed is pathological. When the pressure is an increasing one, pain is usually complained of. The patient may call out, or he may simply wince or draw up his face, or he may move away to avoid the continuance of the painful pressure, or, in the case of a lung, he may begin to cough. The pressure may be exerted by a percussion hammer, or by the fist or by a finger. The author has designed a special hammer, which he considers to be better than all other percussion hammers. This instrument is used for the purpose. The fist, he states, is also a useful means of eliciting the pain from pressure. When applied by the finger, he calls the method algeoscopy, and this method he finds to be the most delicate. After discussing the situations at which the pain is found in phthisis, he turns to the exclusion of other conditions. Rheumatic muscle pains are limited to groups of muscles and the distribution suffices to distinguish them. Neuralgias can also be detected by their distribution. It is extremely rare that a costal neuralgia is limited to the first or second cervical nerve on one side. He also deals with less common diseases, and concludes by describing briefly his method of testing for pressure pain. This is done by gradually applying pressure and desisting as soon as the pain is determined. He finds that this symptom is present in 81 per cent. of all early cases. The symptom alone is not supposed to form the basis of the diagnosis of phthisis, but in conjunction with other signs it will be found of great value.

25. Sigmoiditis and Perisigmoiditis.

A. MAYOR (*Journ. de Méd. et de Chir.*, July 25th, 1908) divides sigmoiditis into chronic and febrile forms, and then discusses perisigmoiditis. Chronic sigmoiditis occurs usually in persons the subject of chronic constipation. Patients the subject of this disorder complain of pain in the left iliac region, which is intensified before or after defaecation; movements of the body increase the pain. Complaints are also made by these patients of functional intestinal troubles, and sometimes attacks of "diarrhoea" occur, the motions being glairy and even bloodstained. Loss of appetite and often great loss of flesh occur after a time. On palpating the left iliac fossa, one finds a cylindrical, elongated, sausage-shaped swelling, which is firm to the touch, and which gradually tapers off above into the descending colon. In febrile sigmoiditis two classes of cases are met with. In one variety occur cases of definite inflammatory trouble, but the inflammation appears to be too superficial, and arises too quickly for one to consider that the whole thickness of the gut has been involved. In these cases purgatives and enemata cause a complete subsidence of the signs and symptoms in a few days. In the other variety of sigmoiditis the whole thickness of the gut is involved, and sometimes this occurs in a case of chronic sigmoiditis. In most of these cases, however, the patient has suffered only from chronic constipation until more or less suddenly pain in the left iliac region sets in. These pains may remain localized or may radiate to other parts, such as the bladder, and in a few days' time become very marked, disturbing and preventing sleep. The temperature is raised, nausea and sometimes vomiting occur, and the constipation may indeed become absolute, neither faeces nor flatus being passed. Sometimes, however, there may be diarrhoea. Accompanying these symptoms one finds some abdominal distension, and on palpation a similar mass to that found in chronic sigmoiditis is to be detected in the left iliac region. In a few days' time, under suitable treatment, the acute symptoms subside, and flatus and faeces are passed, but the passage of these causes marked pain in the iliac region. Perisigmoiditis occurs in two main forms. In the first the affection occurs in persons who suffer from sigmoiditis. In these cases fever sets in, sometimes with shiverings; nausea and vomiting, which become more and more frequent, occur; general abdominal distension, with absolute constipation, sets in, and muscular rigidity over the left iliac region becomes more marked. These symptoms, together with the changes in the pulse and the facies, cause marked resemblance to a case of general peritonitis. In the course of a few days one finds in the left iliac region a large swelling. When resolution occurs the sigmoid loop gradually separates itself from the surrounding loops of gut and appears hard, sausage-shaped, and painful to pressure. If suppuration occur, the usual symptoms of suppuration show themselves, and the swelling gradually increases in size. In the second variety of perisigmoiditis the patient may be suddenly attacked whilst in the best of health; in other cases he has suffered from intestinal disturbances for some time previously. In both cases, however, the symptoms of perisigmoiditis very quickly show themselves, either in the form of an iliac phlegmon or in the form of a peritoneal inflammation. In these cases of abrupt onset the thigh may be flexed on the pelvis or pains may be felt in the left leg. Of the complications which may arise from sigmoiditis and perisigmoiditis, Monad mentions transitory albuminuria, phlegmasia is noted by Loison, a pain over the liver on percussion by Mayor and Gerlier. In some patients their constipation becomes aggravated, and in others defaecation is always accompanied by pain. Recurrences are relatively frequent. Simple chronic sigmoiditis has to be differentiated from cancer or tuberculosis of the sigmoid. Where in addition acute attacks have occurred, actinomycosis and inflammation, consecutive to intestinal narrowing, have to be considered. When suppuration has occurred, infections of the female genital organs, appendicitis and abscess of the psoas muscle have to be considered in the differential diagnosis. The greatest difficulty is to exclude cancer; but where there is a definite history of several years' duration, and in the course of which one discovers in the left iliac region a cylindrical sausage-shaped swelling, which is quite regular, smooth, mobile, and firm, but not of a wooden hardness, and when one finds that there is no history of frequent attacks of diarrhoea, or of abundant haemorrhages, one can with considerable confidence exclude cancer. As regards treatment of these conditions, the main endeavours are to overcome constipation, to relieve pain, and to favour resolution of the inflammatory trouble. When there are no marked peritoneal signs daily purgation is indicated. Injections of warmed oil are useful, and for the relief of abdominal pain hot fomentations are of great use. At the commencement of an attack of perisigmoiditis a small dose of morphine should be given to relieve any intestinal spasm, whilst treatment is conducted on similar lines to those employed in sigmoiditis.

26. A Scapular Murmur.

UNDER this title Tedesschi (*Gazz. degli Osped.*, November 8th, 1908) describes certain phenomena which can

be detected in some cases when the palm of the hand is laid over the scapula and the patient told to breathe forcibly or swing the arm to and fro. Under these conditions something between a thrill and a friction fremitus can occasionally be detected, or if the ear is placed over the spot a sound between a rustle and a bubble. Continued movement of the arm may cause the sensation to disappear. The sensation described is not to be confused with pleural friction or with coarse rheumatic grating. During the last three years the author has observed 58 cases where this scapular murmur could be detected; 32 of these presented early signs of phthisis either at the time or shortly after the detection of the murmur; 17 had decided, rather advanced phthisis; and 9 showed nothing more than anaemia and general debility. There was no constant relation between the diseased lung and the side where the scapular murmur existed; sometimes it was the same side and vice versa. It could not be due to wasting of the shoulder muscles, for in the early cases there was no wasting. Exaggerated professional use of muscles (for example, in seamstresses) might tend to cause this particular localization; but the leading factor seems to be tuberculosis, and the author believes it is really a case of tuberculous myositis. The chief aim, however, in bringing the matter forward is because it may be of assistance in the early diagnosis of phthisis. The author says that he has not infrequently detected this scapular murmur before the appearance of any recognizable clinical signs of that disease.

SURGERY.

27. Prostatectomy.

Wilms (*Deut. Zeit. f. Chir.*, Bd. 93, Hn. 4 and 5) states that though suprapubic prostatectomy is rapidly superseding the perineal operation, he still, with many of his German colleagues, prefers the latter, the general adoption of which, he holds, is prevented only by the dread of wounding the rectum. It is asserted that the diseased prostate, even though it may not be much enlarged, projects downwards at the margins of the pubic arch to such an extent that either of its lateral lobes can be readily reached through an incision made on the corresponding side of the perineum. This incision, which should be about 2 in. in length, is made over the desecending pubic ramus on the left side. After blunt dissection of the thin layer of fascia and the subjacent layer of connective tissue, the left lobe of the prostate is reached. In the deep dissection the ischio-cavernous muscle, together with the internal pudic artery and its branches, is pressed towards the middle line. After the course of the urethra has been revealed by the introduction of a catheter, and the capsule of the left lobe of the prostate has been incised, the operator will be able on introducing his finger through this opening to separate the whole of the prostate from its capsule as is done in the vesical method. The right lobe should be first attacked in front, where there is often some resistance to be overcome at the junction of the two lobes. The prostatic portion of the urethra is removed with the gland. In his experience of this operation the author has been struck by the small amount of bleeding. Wounding of the rectum is, it is held, quite impossible, as in detaching the posterior part of the gland the surgeon works within the capsule. In the after-treatment inferior drainage is carried out. The author, who has been led by the results of his own experience to prefer this method of prostatectomy to any other in present use, hopes that its simplicity and efficiency will soon be widely recognized.

28. Cholesteatoma or Umbilical Calculus.

Coenen (*Beiträge zür klin. Chirurg.*, vol. lviii, Part 3, 1908) reports that a porter, aged 49, was admitted into hospital for a suppurating umbilical fistula. He was of intemperate habits, yet had enjoyed good health until the past six months. Then pain in the umbilical region set in, especially when he bent his body at work. Three days before admission pus and blood discharged freely from the navel. There had been no symptoms of peritonitis. Coenen found that the discharge was very free and feculent, so that intestinal fistula was suspected, but no trace of semidigested food tissue could be detected. Around the fistula there was redness of the skin and induration with tenderness. Icterus set in a day or two after admission. A free incision was made over and through the orifice of the fistula, exposing a cavity filled with pus, of the capacity of a hen's egg. It extended posteriorly into the abdominal cavity, but was cut off from the peritoneal cavity by old peritonitic adhesions. In the abscess cavity lay a pearly, shining body as big as a pigeon's egg. On section it was seen to be laminated; in fact, it was a cholesteatoma. The jaundice disappeared a few days after the operation, and the fistula healed up. The complication, according to Coenen, was therefore not due to hepatic disease, but to pressure of the wide area of inflamed parietal tissue and of the abscess on the bile ducts. He adds that new growths are relatively common in the tissues of the umbilicus. Again, fistulae communicating with Meckel's diverticulum and the urachus, and fistulous tracts lined with gastric mucous membrane (Tillmanns, Lexer, etc.), as well as urachal cysts, have repeatedly been detected in connexion with the umbilicus, as well as small new growths representing inclusion of intestinal epithelium.

29. Molluscum Contagiosum in Husband, Wife, and Child.

Goodall (*Amer. Journ. Obstet.*, September, 1908) was consulted by an emigrant French woman in the fifth month of pregnancy for frequent micturition. He found no definite condition which could explain the symptom, and there was no abnormality about the genitals. Two months later the husband consulted Goodall on account of an attack of molluscum on the dorsum of the penis, partly suppurating. The only explanation which he could give was that when on board ship he had frequently used towels in common with other passengers. The first wart, as he called it, appeared over three months after he had landed with his wife in Canada. He had irritated the nodules of molluscum by caustics. Two small nodules appeared on the mucous surface of the prepuce. He was advised not to have connexion, and when he brought his wife at a second visit not a trace of the disease could be found on the external or internal genitals. She was delivered at term about two months after that visit, and not a sign of molluscum was detected. Two months after the confinement she consulted Goodall once more, stating that she thought she had contracted the disease to which her husband was subject. Nineteen characteristic nodules were found, confined to the labia majora, perineum, region of anus, and outer surface of the labia minora. Eleven months later the mother brought her child, which had developed seven nodules of mollusca on the left side of the neck and shoulder. They had been observed by the mother for about six weeks. Although the symptoms of the skin disease in the child developed late, and although Goodall detected no trace of molluscum on the mother's genitals during delivery, he was inclined to believe that molluscum was incipient in the mother at that time, and that it was then communicated to the infant in whom it lay latent for several months. Goodall dwells on the fact that in the case of the mother no trace of molluscum could be found on the cervix, vagina, or mucous surface of the vulva. The bactericidal action of the genital secretion prevented infection. The absence of sebaceous or other glands in the vagina has to be taken into account, but glands exist on the inner surface of the labia minora and in the vestibule.

OBSTETRICS.

30. Caesarean Section.

Mouchotte (*Ann. de Gyn. et d'Obstét.*, November, 1908) reports 14 cases in which Caesarean section was successfully performed. He found that in 12 out of the 14 cases the pelvis was rachitic with markedly reduced diameters, seven pelves belonging to the canniculated type, and five to the annulated type. In dealing with contracted pelvis, he waits for dilatation to become complete in order that symphysiotomy may be attempted; but when symptoms of urgency arise, Caesarean section is undertaken without further delay. In two of his cases prolapse of the cord and a change in the cardiac sounds hastened intervention, in two others a brow presentation showed signs of becoming impacted, and in two other cases osteitis and tuberculous hip had caused obstruction of the parturient canal. Operation was only undertaken after the onset of labour pains. In cases which evidently cannot be delivered naturally there is no need to delay operation for long; in cases of moderate contraction, when there is some hope of spontaneous delivery, the practitioner may wait some hours, even some days, for complete dilatation followed by symphysiotomy. If while waiting signs of distress on the part of the mother or child supervene, the operation cannot be deferred, and is then undertaken under less favourable conditions. Nine of the writer's cases were operated upon late, and after the membranes had ruptured, and it was in these cases that a rise of

temperature and in the pulse-rate was noted during the two subsequent days. In all the operations the uterus was brought out of the abdomen before being incised; this method is considered to conform more particularly to surgical principles, and to prevent the entrance of blood or fluid into the peritoneal cavity. If gloves are worn they should be changed after the uterus has been cleared out and cleansed. Vertical incisions were made in the middle line, beginning below at the junction of the lower and upper uterine segments. It is not unusual to find the placenta adherent to the anterior uterine wall, and in the line of incision. In the earlier cases the incision was made through the placental tissue, but this plan was abandoned in favour of finding the layer of attachment of the placenta to the muscle wall and stripping it up, so as to permit of incision of the wall; the membranes were then divided above the placental margin, and the fetus having been extracted, it was simple to remove the whole after-birth intact. The cleansing of the uterine cavity is accomplished rapidly, unless there is adherence from endometritis. This was present in two of the cases reported; one suffered from phlegmasia dolens and fetid lochia, the other had a small haemorrhage. A gauze drain put into the uterus before suturing and led out through the os uteri assists drainage, but is unnecessary when the membranes have not been ruptured before the operation. Catgut was used for sutures, and in all cases a drain was left in the abdominal wound for forty-eight hours. The writer considers the operation a simple one, easy to execute, and giving excellent results.

31. Caesarean Section in Cases of Vaginal Contractions.

POZZI AND HARTMANN (*Comptes Rendus de la Soc. d'Obstét. de Gyn. et de Pédiatr.*, July-October, 1907) related two instances where Caesarean section was performed on women with contractions of the vagina. Pozzi's patient was a healthy married woman aged 23. She had menstruated ever since the age of 17, and married at 18; connexion was always painful. At length, when under observation, she became pregnant. The meatus urinarius was not quite normally placed; the vagina ended in a cul-de-sac about 2 in. above the vulva, where the os externum could be felt as an orifice with rigid borders, about 1 mm. in diameter, and not dilatable. As the cervix was softened by gestation its limits could not easily be defined. About term it was found that the fetal heart sounds were becoming weak, so Pozzi did not wait for labour. He performed Caesarean section, saving both mother and child. As he found that it was impossible to drain the uterine cavity through the vagina, owing to the rigidity of the contraction, he amputated the uterus above the cervix. Hartmann's patient was 39 years old. When 25 years old she suffered from dysmenorrhoea; her doctor then discovered a vaginal contraction, through which only a very slender probe could be passed. Some operation, of a nature not clearly ascertained, was performed, and the catamenia were never painful afterwards. In 1905 the patient consulted Hartmann, and he could define a circular stricture 1½ in. above the fourchette; the forefinger could hardly be passed through it. He did not advise any operation, and considered that there was little chance of pregnancy; though, if it occurred, delivery through the natural passages seemed hardly possible. The patient did become pregnant, the vagina grew softer and more capacious, but the stricture remained as narrow and rigid as before. Labour pains set in about term. Hartmann operated, saving mother and child. As in Pozzi's case, the stricture prevented drainage, and the dangers of another pregnancy seemed great; moreover, the patient was relatively old. He therefore amputated the uterus above the cervix. There was a long discussion after the two cases were read before a medical society, in which several leading obstetricians took part. A few details were criticized, more than one speaker implying that the uterus in both cases might have been saved, a second Caesarean section being hardly more dangerous than a first; but Pozzi insisted on the unfavourable condition of his case for vaginal drainage, so that infection would have been almost certain; and Hartmann stated that his patient, nearly 40 years of age, lived in a remote country district, and might therefore be in danger, for self-evident reasons, should she become pregnant once more. Lepage doubted if all chance of further offspring should be taken away; the only child in both these cases might die. Pinard favoured operations of this kind when labour set in, and not earlier. Operators made too sure about "term" when there had been no pains. Routier related a case where labour was retarded by a cicatrix following sloughing of the vulva and part of the vagina as a complication of small-pox. The scar tissue, however, was successfully divided with scissors, and the child was delivered alive. Potocki operated in 1902 in a case of congenital stricture during labour, after finding that the firm circular ring half-way up the vagina was not stretched by the pressure of the fetal head during the pains. He performed Caesarean section, and amputated the body of the uterus. The patient recovered, and suckled her child.

GYNAECOLOGY.

32. Bier's Method in Gynaecology.

ADLER (*Pester Mediz.-Chirurg. Presse*, November 8th, 1908) has found Bier's method of value in cases of old and obstinate endometritis, the secretion disappearing permanently for a long time; in cases of inflamed appendages, the pain being always stilled while exudation is not appreciably lessened; and in amenorrhoea. His cases of endometritis were those which had been under treatment on and off for two to five years without essential improvement. He applied suction daily, or every other day, for five to fifteen minutes, with moderate rarefaction. After the first sitting the secretion was much increased; after four or five sittings discharge ceased; and in three to six weeks the patients were cured. Some returned after several months with a slight discharge. Erosions were often present and healed slowly—in one or two months. There was no pain during the suction, or if present it ceased at once on letting a little air in. In no case did considerable bleeding result. In cases of subacute and chronic inflammation of appendages with exudation, Adler found that though pain was removed the exudation was but slightly influenced. In 3 cases of large exudation of puerperal origin in private practice the treatment was begun ten to fourteen days after the fever, and was continued, at first daily and then every other day, for five to six weeks, but the exudation was only reduced by a quarter or a third. The result in chronic tumours of the appendages was no better. In 8 cases no cure resulted, but after four or five sittings pain began to lessen, and later disappeared, while in three or four weeks the patients mostly felt well. In 4 cases of retroflexion with fixation, in private practice (other means being also employed), the author had the impression that the suctions were of definite assistance. A hypoplastic uterus was treated on account of amenorrhoea for two months every other day. A sufficiently copious period, quite painless, lasting two days, ensued, while a decided development of the uterus took place. Adler uses the ordinary tube speculum of caoutchouc, which is closed after insertion in the vagina (the cervix being carefully introduced) by a conical rubber stopper, pierced by a glass tube which is connected by a rubber tube with the pump. When the required rarefaction is obtained this rubber tube is clamped and the instrument left on for a certain time. The speculum is only removed when the cork has been taken out. The action of the suction is partly the regular removal of the secretion, partly the hyperaemia induced on the pelvic organs, and partly the congestion caused by the kinking of the veins.

THERAPEUTICS.

33. Unna's Bandage in Ulcers of the Leg, etc.

HECKER (*Mediz. Klinik*, October 18th and October 25th, 1908) has employed Unna's paste since 1886, and finds Unna's original formula the best—that is, zinc oxide, gelatin, āā 4 parts, glycerini, aq. destillat., āā 16 parts (ichthyol 1 part). The leg is thoroughly cleansed with soap in a warm bath, shaved, and the fat removed by rubbing with cotton-wool dipped in ether or benzine. The whole of the leg except the ulcer is then painted by a bristle paintbrush with Unna's paste liquefied (but not heated) in a water bath. The ulcer is sprinkled over with a thick layer of airol and covered with cotton-wool, which is also placed round the foot immediately behind the toes and around the leg about a handbreadth below the knee. The heel and ankle are covered with cotton-wool or, in very sensitive people, with boletus igniarius. Two strong gauze double-headed bandages (that is, rolled from both ends towards the middle to get the necessary pressure) are well wrung out of water and applied, if possible, before the patient leaves bed. The leg is bandaged from the ankle to the toes and upwards to a handbreadth below the knee, the cotton-wool reaching a centimetre higher, each turn of the bandage overlapping the previous one. The second bandage is similarly applied over the first, every turn being drawn equally tight. The leg

must be kept horizontal throughout, and the bandage freely exposed to the air until fully hardened. This may be hastened by a hot stove or the sun. Unna's bandage should be worn some time after the ulcer heals, and be followed by an elastic bandage until the scar is quite consolidated. Hecker leaves the bandage on three weeks, or, later, four to six weeks, more frequent changing being only necessary in cases of unusually free secretion. Some accumulation of secretion does not in any way hinder the cicatrizing of the ulcer if a thick layer of airol, dermatol, or xeroform be present. With these Hecker has never observed idiosyncrasies, as in the case of iodoform. The bandage is cut away with plaster-of-Paris nippers or simply unwound after softening with warm water, the outline of the ulcer having been sketched on the bandage as soon as hardening occurred. If the surrounding skin is much irritated, before applying the bandage rest and compresses of lead acetate, lysol, chinosol, or these with ice, may be used for three or four days. If eczema still persists, spreading it with Unna's paste usually suffices to heal it. In cases of bad weeping eczema, first apply Lassar's paste (zinc oxide and starch āā 1, vaseline 2). The chief advantages of Unna's bandage are: (1) Rapidity of healing, a firmer cicatrix being formed than by any other method, after a few bandages; (2) the patient's occupation may be continued undisturbed throughout; (3) enormous saving of expense; (4) if the bandage presses in any place, it may be permanently softened by repeated moistening, instead of cutting it away; (5) the severe pains accompanying ulcers of the leg diminish and disappear; (6) the bandage has a good effect on varicose veins. It is best to first paint these thickly with ichthyol-collodium, 1 to 10. Unna's bandage is also very useful in promoting (1) the absorption of effusions into joints, (2) the healing of wounds. It is very practical for children, round the neck (after extirpation of glands, etc.), thorax, limbs, especially where these join the trunk, and fingers. After an amputation or excision, etc., the wound is covered with a thick layer of iodoform gauze, a few turns of a small bandage applied, and the whole finger enveloped in paste. The simple method of arresting haemorrhage by means of this bandage forms an important substitute on the battlefield for the dangerous and painful tourniquet.

34. The Prevention of Tuberculosis in Childhood.

S. A. KNOPF (New York *Med. Record*, December 5th, 1908) says that the predisposition to tuberculosis consists of a general enfeebled condition without distinct pathological lesions, all the organs possessing less than normal resistance to the attacks of disease. The overcoming of this predisposition must begin *in utero*, the mother being placed in the best possible hygienic conditions while bearing the child. She should take breathing exercises. Her living and sleeping rooms should be well ventilated. There should be a law preventing work in dusty, insanitary environments for children, and a pregnant woman should have to give up work in a shop two months before her confinement. The newly-born child needs fresh air as much as the mother. From the tenth to the twelfth months the child should be accustomed to cold baths gradually. Children should be dressed without constriction and young girls without the corset. The author describes exercises to be used to produce deep breathing. The conception of deficient respiratory function in the apices is erroneous. These portions of the lungs inspire well but expire poorly, so that the micro-organisms remain in them. A thorough inhalation followed by a thorough exhalation should be taught by exercises. The child should not go to school before the eighth year. It should have more sleep than other children, and should be most of the time in the open air during the day. More school farms and playgrounds are needed, and outdoor sports should be encouraged. The most frequent sources of post-natal infection are kissing, tasting the food, coughing in the face of the child, and the infection of its hands by handling articles and playing on the floor. Ritual circumcision should be placed under sanitary restrictions.

PATHOLOGY.

35. Human and Bovine Tubercle Bacilli.

IN from 1 to 5 per cent. of phthisical patients either no or but few tubercle bacilli can be found in the sputum when stained by the usual Ziehl method, but when the sputum is stained by Sprengler's "*Perlsucht*" method numerous bacilli may be seen. C. Sprengler (*Deut. med. Woch.*, February 28th, 1907) finds that bovine bacilli are easily decolorized by acid, especially when found in the human host. His method is carried out without any acid treatment. He further has found that nearly 60 per cent. of all phthisical patients have both the human and bovine type of bacilli in their sputum. He therefore came to the conclusion that it was very desirable to work out a more certain method for distinguishing between the two forms of tubercle bacilli by means of staining properties. He now describes three new methods. First, he deals with his capsule or envelope method. This is a method of staining in layers. Smears are rendered alkaline in a 1 per cent. caustic soda or potash solution and very carefully dried with heat. The wax envelope of the bovine bacillus has a low melting point, and therefore one must be careful not to overheat. Next one pours on to the specimen some Loeffler's methylene blue, and washes with water. The next stage consists in staining with warm carbol fuchsin until steam rises from the fluid, and then washing off the stain with water. Then one restains with methylene blue and adds one or two drops of a 15 per cent. sulphuric acid to the stain. This stage only lasts a few seconds. The specimen is then rinsed in water and dried between blotting paper or by some other means, care, however, being taken not to overheat if dried over the flame. Stained in this way, *Perlsucht* bacilli appear much larger than human tubercle bacilli. Another striking difference between the two forms when stained by the capsule method is that the bovine bacilli show what Sprengler calls "splinters," which are structures arranged in the interior of the bacillus in a precisely similar manner as anthrax spores are arranged. He claims to have proved that these splinters are spores. In the human bacillus no such splinter formation is seen, while spore-like bodies which are arranged in chains are seen instead. The wax capsule is very thin, and constricts the bacillus between the spore-like bodies. The wax capsule is rarely sharply defined in the latter, but it is always sharply defined in bovine bacilli. The envelope method only succeeds satisfactorily when the *Perlsucht* bacilli have not been subjected to drying. The envelope is very delicate, and is liable to shrink when its moisture is abstracted. However, the human organism possesses the capability of so damaging the wax envelope that this method can no longer serve as a differential method. Under such circumstances he uses his second method—the picrin method. This is carried out, as before, by staining in carbol fuchsin, then treating in picric acid-alcohol after pouring off the fuchsin for two or three seconds; then adding 3 or 4 drops of 15 per cent. sulphuric acid and more picrin until the film appears faintly yellow (this takes from five to ten seconds); then washing in water, and, lastly, drying. The picrin solution is made up by mixing equal parts of a saturated solution of picric acid and absolute alcohol. The bacilli, when stained in this way, appear brilliantly red, as do also the "splinters," and both are well contrasted against the yellow background. The method presupposes a trace at least of the wax envelope. One meets with one difficulty in carrying out this method. This is that it is extremely difficult to focus with high powers. He finds it best to first seek the yellow islands in which the red bacilli must be sought, under comparatively low powers, and then to apply the oil-immersion lens without moving the specimen. He claims that the picrin method is specific for acid-fast bacilli. Further, he believes that the evidence of damaged wax envelopes is of prognostic importance. When this is marked it indicates that the patient is getting the upper hand over his bacilli. The last method is called the "colour-true method" (*Farbaechtmethode*). This means that when the bacillus has once taken up carbol fuchsin it is unaffected by any other stain. All the bacteria which belong to the acid-fast group are colour true. No acid decolorizing is used. While tubercle bacilli from the human origin are probably better stained after Ziehl's method, other acid-fast bacilli show up much better as colour-true pictures. All three methods are therefore capable of distinguishing bovine from human tubercle bacilli under various conditions. He adds a few other remarks on the details and interpretation of the methods.

36. A Case of Cyclops.

MIZUO (*XXXV Versamml. d'Ophth. Gesellsch., Heidelberg*, August, 1908) described a case of complete cyclops. The anterior brain looked like a placenta, the middle brain was maldeveloped; there was one central eye and one optic nerve. The rest of the body was normal.

CORRECTIONS.

IN the EPITOME of December 19th, 1908, No. 361, col. 2, line 25, the word "sanatol" was printed instead of "santalol." In line 30 mention is made of ricinol, which is described as the active principle of cod-liver oil; this should of course read "castor oil." We regret that these errors should have crept in through inadvertence.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

37. Congenital Pyloric Spasm.

KOPLIK (*Amer. Journ. of Med. Sciences*, July, 1908) records several cases of congenital pyloric spasm and congenital hypertrophic stenosis of the pylorus in infancy, and in order to more clearly differentiate the varying forms which may be found he considers the subject under two headings. Notes of three cases are given typical of those in which there is a definite spasm of the pylorus initiated by some error in feeding, thereby causing an increased peristalsis of the stomach which eventually results in such pyloric spasm. The peristalsis may not be sufficiently marked to be visible, but the children vomit after every nursing, at times rejecting more than has been taken, a residual amount of food being retained by the stomach. The prognosis is good and operation is not indicated. Six cases are reported presenting initial symptoms as severe as the above but in which either a rapid improvement followed under observation, or after passing through many dietetic vicissitudes they recovered spontaneously on foods apparently scientifically most unsuitable. In the second class of cases, not only does pyloric spasm exist with peristalsis of the stomach, but in addition there is a distinct hypertrophy of the pylorus and a narrowing of the lumen from a distinct growth of new tissues, which can be palpably demonstrated as a hard nodular mass, and the peristalsis too is markedly visible. This latter condition presents all the symptoms of simple spasm in an aggravated degree, and in addition there is marked visible peristalsis towards the pylorus and constipation is more marked, the stools showing little or no milk faeces, but only bile-stained mucus. As regards prognosis the cases of simple spasm will generally be relieved by persistent trial of feeding, while many of the hypertrophic cases will eventually recover upon the same lines, only the rare cases requiring operation. Breast feeding is the ideal and should be given at long intervals and short nursings, and in artificial feeding small amounts at each feed should be given. Stomach washing appears to be useless and in some cases harmful, but enemata in the form of enteroclysis of small amounts of normal saline solution given several times daily are useful in maintaining nutrition.

38. X-Ray Diagnosis of Tracheo-Bronchial Adenitis.

LAUREATI (*Gazz. degli Osped.*, October 25th, 1908), continuing his researches in the diagnosis of enlarged bronchial glands, gives the result of a number of *x*-ray examinations of the thorax in 30 cases of children who were reasonably suspected (and in many cases proved) to have enlarged tracheo-bronchial glands. The net result was to show that such examinations possessed only a relative value in conjunction with other symptoms. Out of the 30 cases, no shadow at all was given in 19 cases, in 1 the shadow was seen anteriorly, in 5 posteriorly, and in 5 both anteriorly and posteriorly. The author suggests that further experience of the real or comparative value of *x* rays in diagnosis might be gained by examinations in the *post-mortem* room. The results of experience so far seem to show that the chief value consists in affording confirmatory evidence, and for this purpose it seems to have about as much and as little value as the venous hum described by Eustace Smith, and fully discussed by Laureati in a previous communication.

39. A Young Girl with a Deep Bass Voice.

SCHEIER (*Mediz. Klinik*, October 25th, 1908) records the case of a girl of 16 with a man's deep voice. The mother died of phthisis. The girl menstruated fairly regularly for a year, when, at the age of 15, the menses suddenly ceased, and her voice changed from a beautiful soprano to a true deep bass. She now has a range of nearly four octaves, sings the deepest bass notes with ease, and also produces the most ideal falsetto tones. The speaking voice has remained a deep bass up to the present. Laryngoscopically the vocal cords are seen to be much broader and longer than in other girls; they are reddened, and during ordinary phonation leave a triangular space between them at the back. They only close completely when she phonates quite high. Externally the larynx appears larger than usual, with a very prominent thyroid angle. Scheier thought first the patient was a hermaphrodite, but the genitals proved entirely feminine, the breasts well developed, the type of respiration entirely costal, and the disposition wholly that of a female. Examination with the *x* rays revealed no ossification of the thyroid cartilage beyond the slightest trace, just starting, in the posterior part of the laminae. The author asks if this is a case of abnormality—the sudden change of a woman's voice into a man's—and will the voice always retain its mannish character, or is it a case of perverse cracking of the voice at puberty? The removal of the testes in boys has a considerable influence on the growth and form of the larynx and on the voice, and, following changes in the female genital organs, the larynx has been observed to approach the male type. When the appearances accompanying the change of voice—that is, the redness and swelling of the cords—have disappeared, an attempt will be made to act on the larynx through the induction of menstruation. Special electrical treatment and systematic voice exercise will be undertaken.

SURGERY.

40. The Operative Treatment of Facial Neuralgia.

MORESTIN (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 32, 1908) publishes two cases of very severe facial neuralgia, in which complete and welcome, though it is anticipated only temporary, relief was afforded by operative treatment. In each of these cases the patient was a male. The first patient, who suffered "terribly" from facial neuralgia involving the regions supplied by the superior and inferior maxillary nerves on the right side, was, after failure of injections of alcohol and an attempt to expose and divide the roots of the affected nerves, subjected to a combined operation in which the author through a single long incision made in front of the sterno-mastoid muscle, ligatured the external carotid, extirpated the superior cervical ganglion, and finally, after division of the inferior dental near the process of Spix, tore away the upper portion of this nerve. This operation was followed at once by complete cessation of pain, not only in the region of the inferior dental, but also over the whole range of the distribution of the trifacial nerve. The interval between the date of the operation, which was performed early in October, and the communication of the report on November 4th is far too brief to present any definite conclusions on the value of the treatment applied to this case, but the author is disposed to think that by the combination of three different procedures, each of which is capable of affording for a time complete relief from pain, the chances of obtaining a durable result may be increased. The long delay in the relief of the neuralgia that usually occurs after sympathectomy alone was abolished in this case, the author holds, by the association of this operation with ligature of the external carotid. The vaso-dilatation due to the resection of the nerve is neutralized by the ischaemia resulting from the arterial occlusion, and thus, it is pointed out, the patient is guarded against painful consecutive reaction. The history of the second case is a record of a long succession of severe operations, including sympathectomy, practised from time to time in the course of the last years, with the invariable result, after intervals more or less brief, of recurrence of very intense neuralgic suffering. After an unsuccessful attempt made in October to expose the Gasserian ganglion the author trephined over the Rolandic region on the opposite side of the head. This operation, proposed and practised in a single case by Jaboulay, was, in Morestin's case, followed, after an interval of a few hours, by complete relief from much suffering. In both cases in which this operation has been practised for facial neuralgia the results have undoubtedly been very good. It is difficult, however, to explain these, and the period of relief in each case has hitherto been too short to allow of any sanguine expectations of an absolute and abiding cure. It is a remarkable fact, the author states, that though in his case trephining on the opposite side gave almost immediate relief, the large opening made in the cranial vault at the previous attempt to reach the Gasserian ganglion had not influenced in any degree the intensity of the pains. In the discussion of Morestin's report Sebileau stated that a long experience of surgical interventions in cases of facial neuralgia had abolished all previous illusions as to the utility of such treatment, and that he thought of refraining from future operations for this affection.

41. Local Anaesthesia in Adenoid Operations.

F. Hutter (*Wien. med. Woch.*, October 10th, 1908) has devised a method of anaesthetizing the pharyngeal tonsil by infiltration. Painting the tonsil must be repeated so often before the deeper parts become anaesthetic that the process is more objectionable than an operation without anaesthesia. If the curved needle of a syringe is passed behind the soft palate from the mouth it may enter the adenoid tissue, but probably does not pass sufficiently high to anaesthetize the roof of the naso-pharynx. Further, owing to the vertical direction of the needle track and the numerous clefts in the pharyngeal tonsil, a considerable quantity of any liquid so injected escapes downwards. In the writer's method the needle is passed through the nostril. A camel's-hair brush is soaked in a 10 to 20 per cent. solution of cocaine, passed through one nostril, slightly upwards towards the upper border of the posterior nares, and left there for a few minutes. The process is repeated on the other side. The deeper parts are caused to shrink, so that the upper border of the posterior nares and the adenoid tissue behind become visible by anterior rhinoscopy. The camel's-hair brush is then gently rubbed over these parts until they are superficially completely anaesthetic. If this part of the process is not carefully done the subsequent prick of the needle will be felt, and the patient, especially if a child, probably becomes unmanageable. The most satisfactory drug, for purposes of injection, is β-eucaine in a warm 5 per cent. solution with 0.8 per cent. of NaCl. Cocaine is unsuitable, as more concentrated solutions are required than are necessary for ordinary infiltration anaesthesia. Novocain is unreliable. The eucaine solution can be sterilized by boiling, is but slightly toxic, and is not followed, as are the vaso-constrictors, by secondary vascular paresis and haemorrhage. Its action is increased by the addition of 5 drops of adrenalin to each syringeful. The capacity of the syringe employed by the writer is slightly more than 2 c.cm (about 34 minims). The needle, which is straight and 12 cm. in length (nearly 5 in.), has a bayonet attachment to the syringe, from which it comes off almost at a right angle. The orifice at the point faces upwards. The needle is passed into one nostril backwards and slightly upwards towards the upper margin of the orifice of the posterior naris, where it impinges on the mucous membrane of the anterior part of the roof of the pharynx and the insertion of the pharyngeal tonsil a short distance external to the septum. This should be done under the guidance of the eye. Even if the dividing line between the posterior naris and the adenoid tissue is not distinct, there is, with practice, no difficulty in selecting a suitable place for insertion of the needle, which is passed on until it meets with the resistance of the basilar process, when its point is slightly elevated so as to reach the highest layer of the adenoid tissue. Considerable pressure is requisite to force the fluid into the tissues, and an easy flow indicates that the needle has not travelled sufficiently upwards to the pharyngeal roof. The process is repeated through the opposite nostril, half a syringeful being injected on either side. After waiting a short time the adenoids can then be removed, in the great majority of cases entirely painlessly. The method is especially applicable to older children and adults, though, in the writer's hands, it has often succeeded in children under 10, and not infrequently in those as young as 4 or 5. There should be no crying or struggling, and the growths can be removed as thoroughly as under a general anaesthetic with avoidance of the dangers inseparable from the latter. It is important not to frighten children by digital examinations or attempts at posterior rhinoscopy, which frequently render them unmanageable. Anterior rhinoscopy is usually sufficient for diagnosis.

42. Hydatid Cyst of the Stomach.

Hartmann (*Rev. de Gynéc. et de Chirur. Abd.*, July–August, 1908) reported before a medical society on a specimen of hydatid cyst of the parietes of the stomach removed by Dujarier. A woman aged 65 was admitted into hospital for pains in the left flank. She had never suffered from any symptoms of indigestion. On palpation a rounded tumour could be defined in the left flank. It was of the size of a fist, firm, very movable, and not very tender. On account of these characters it was taken for a movable kidney. A lumbar incision was made with a view to nephrorrhaphy. The kidney was found to be in its normal place and perfectly healthy. The posterior layer of peritoneum was laid open, and then it was found that the tumour was situated in the stomach. The lumbar wound being closed, Dujarier opened the abdominal cavity anteriorly. The cyst was enucleated from between the muscular and mucous coat of the anterior wall of the stomach. The patient recovered without any complications. Hartmann maintained that the case was unique. Tuffier, in discussing it, stated that he had operated on a case of hydatid cyst of the lesser omentum, which being closely applied to the lesser curvature felt like a tumour of the stomach, and was diagnosed as cancer of that organ.

OBSTETRICS.

43. Central Rupture of Perineum.

Reisch (*Monats. f. Geb. u. Gynäk.*, September, 1908) recently reported before a medical society a case of breech presentation, where the after-coming foot tore through the recto-vaginal septum and projected out of the anal ring. The perineum remained intact, but it had to be laid open from the vagina before the foot could be set free. More recently he attended a primipara, aged 21, where the second stage was lingering; at each pain the head passed the perineum, so that the vulval ring was pushed forwards. The midwife protected the perineum according to the usual practice, and at length the head was delivered. The perineum seemed intact, but on closer inspection an oblique laceration was detected in front of the rectum, and the shoulder could be seen pressing it open. Reisch managed to make the shoulder pass through the uninjured vulval ring, and delivered the child, a well-developed female, over 7¼ lb. in weight. Then it was clear that a central rupture of the perineum existed, over 2½ in. in length, and running from near the anus on the right obliquely forwards to the left, ending about the middle line of the perineum. The sphincter ani lay bare, yet unruptured, in the wound. The vagina, on the other hand, was severely lacerated, its posterior wall being torn away from the perineum, which formed a bridge over the torn tissues. The vaginal laceration reached to the rectum posteriorly, as far as the labia minora laterally, and passed upwards on each side of the posterior vaginal column, 2 in. on the left and a little over 1 in. on the right. There were some short fissures in the vaginal wall anteriorly, near the meatus urinarius. The bridge of unlacerated perineal tissue anteriorly had to be laid open in order to repair the damage to the vagina and deeper parts satisfactorily. The wound healed by second intention, as there had been much bruising of the tissues, but it ultimately healed very well. Reisch discussed the mechanism of central rupture of the perineum and of rupture of the recto-vaginal septum in labour.

44. Decapsulation of the Kidney for Eclampsia.

In 1903 Sippel suggested, on the basis of conditions found in an autopsy, that eclampsia might be due to the displacement of a ureter causing a marked venous stasis of the kidney. The displacement of the ureter would be caused by the uterus increasing in size, and even when the cause of the displacement no longer acted, the hyperaemia would continue in the kidney. He therefore proposed stripping the capsule off the kidney in cases of venous hyperaemia or anuria. In discussing the value of this method of treatment for eclampsia, Ernst Runge (*Berl. klin. Woch.*, November 16th, 1908) follows out the history of the development of the suggested treatment. Edebohls independently came to a similar conclusion, and was the first to carry the idea into practice. He dealt with three cases. He had obtained an immediate increase in the quantity of urine secreted in 100 cases of chronic nephritis by decapsulation, at times obtaining enormous quantities of urine. In two of his eclampsia cases the emptying of the uterus did not have the desired effect, while the fits ceased after the decapsulation. Polano first carried out this in Germany. The fits set in after delivery, and ten days *post partum* he carried out the operation. The patient died, but he was of opinion that the procedure had exerted a beneficial influence on the diuresis and on the general condition. Gauss reported on a successful case. Asch, Wiemer, Kleinertz, Frank, and Falgowski also were able to record successful cases. Others, however, did not have so much good fortune, and Essen-Müller, Haim, and Kleinertz lost patients after the operation. Bumm, too, attempted this method in three cases, but failed to prevent a fatal termination. The opinions as to which time is the best to operate are still divided. Some wish to operate after delivery has proved unsuccessful, while others consider that it should be performed as soon as the diagnosis is made. Bumm considers that decapsulation should only be attempted during the puerperium, when the fits continue, or when anuria is complete. He prefers to reserve the operation to those cases which offer no chance of recovery when treated by any other method. The observations on

the kidneys at the operation differ widely. At times the kidneys were tense, and protruded as soon as the capsule was divided; while other kidneys were soft, not enlarged, and sodden. In surveying the position Runge finds that of the 17 patients who had been subjected to the operation, 9—that is, 53 per cent.—have died. It is probable, in his opinion, that some of the patients who recovered might have done so without operation. Improvement only set in in two cases a considerable time after the operation. In other cases, however, the immediate increase of the diuresis and diminution in the quantity of albumen kept pace with the decrease in the number of eclamptic fits, and it is therefore possible that the operation saved the patients' lives. It is impossible at present to give a definitive verdict as to the value of this operation in the treatment of eclampsia, but up to the present the results are not very promising. In the hands of a skilled operator, however, decapsulation is not a severe operation, and can be performed in about twenty minutes. It may, therefore, be tried in desperate cases when all other means have failed.

GYNAECOLOGY.

45. Inoperable Uterine Cancer.

IN discussing the treatment of inoperable cancer of the uterus, H. Freund (*Deut. med. Woch.*, December 3rd, 1908) finds that some difficulty is experienced in defining inoperability. When the malignant growth has spread beyond the limits of the pelvic cellular tissue and has involved other organs, when perforation of the bladder or rectum has taken place, or when marked cachexia, with dropsy and other terminal symptoms have presented themselves, there is no doubt about the inoperability. In less advanced cases the determination depends on the skill in examining, the experience, and the technique of the gynaecologist. The best way out of the difficulty is to consider as operable only those cases in which all the macroscopical cancerous tissue can be removed. When the disease has not advanced as far as in the cases described above, and the strength of the patient still admits of operative interference, he considers it advisable to consider the question of operative treatment of "inoperable" cancer. The operation, then, must include the removal of the uterus, and as much as possible of the pelvic connective tissue and vagina. In spite of the theoretical opinion that incomplete operations should be carried out vaginally, he believes that this operation should be performed through the abdominal wall. If done vaginally, the vulsella usually tear through, the bladder cannot be detached, and the haemorrhage can only be controlled by means of tamponage or permanently applied pressure forceps. The results obtained in this way are usually not better than those obtained by means of the cautery or sharp spoon, which only occasionally are satisfactory. As a rule the beneficial effects of these palliative operations only last for a very short time. During the last two and a half years he has operated solely through the abdomen. The object of the operations is not so much the prolongation of life as the arresting the spreading of the growth and the checking of the bleeding and decomposition. The results which he has obtained were particularly satisfactory with regard to the checking of bleeding and discharge. He illustrates this and other points by means of clinical histories of cases. The following points are especially emphasized: (1) That there is a sufficient preparation. The patient is put under an anaesthetic (deep anaesthesia is not necessary), and exuberant parts of the growth are removed by the sharp spoon or cautery, and then dried and disinfected. The drying and disinfecting is achieved by means of tannin-salicylates and repeated application of 3 per cent. peroxide of hydrogen. (2) At times it is advisable to perform a sort of high amputation in cases of cervical cancer, and to disinfect and dry prior to the more radical measure. (3) In the operation itself it is necessary to work rapidly and to provide ample protection of peritoneum. The removal of the malignant tissue is best done by means of Cooper's scissors, which will not lead to wounding of neighbouring organs. Naturally portions will be left behind, but this is unavoidable in inoperable cancer. (4) It is necessary to cover the whole of the field of operation by means of peritoneum. If healthy peritoneum cannot be made to unite exactly so as to shut off the soiled and infected area, it is better to limit the operation to ligature of the arteries. Objection has been taken to this severe procedure on the ground that the operation is a big one, the risks are considerable, and the possibilities are small. Freund answers that if only those patients whose disease has not advanced so far as to render death imminent are chosen for the operation, the operation, which can be completed in forty minutes, is well stood, and within a short time the general condition improves very materially. The freedom from haemorrhage and discharge acts beneficially on the mind as well as on the body. The use of lumbar analgesia for general anaesthesia has further assisted in rendering this operative interference justifiable. With regard to pain in inoperable cancer of the uterus, the author has made the experience that morphine, opium, and the usual narcotics not infrequently fail. He has given a single lumbar injection of stovaine, and while this only obtained complete freedom from pain for one day the pain was never so intense afterwards that it could not be banished with aspirin or morphine.

THERAPEUTICS.

46. Serum Treatment of Epidemic Meningitis.

FLEXNER AND JOBLING (*Journ. of Exper. Med.*, September, 1908) have analysed 393 cases of epidemic meningitis which were treated with antimeningitis serum. Out of these, 295, or 75 per cent., recovered. In children under 1 year of age the prognosis is usually considered to be hopeless, but out of the 22 cases analysed by the authors 11 recovered. Of the 11 cases which terminated fatally, 10 were already in the third week of the disease when the treatment was commenced, and some were in a later stage; 6 or more presented well-marked symptoms of hydrocephalus; and only 1 was in the first week of illness at the time of the first injection. Of the 11 cases which recovered, 1 infant was 4 weeks old when first injected, all but three were in the first week of the disease, and none showed symptoms of hydrocephalus when the injections were begun. Of the 19 children in the series between the ages of 1 and 2 years, 11 recovered and 8 died. Analysis of these shows that only 1 case injected in the first week of illness died, while 6 cases injected in the first week and 5 injected from the second to the fourth week recovered. In patients of all ages the importance of early inoculation is emphasized. The histories of 361 cases were sufficiently explicit to enable the authors to ascertain with fair accuracy the date at which the treatment was commenced. Injections were given during the first three days in 123 cases; only 16, or 16.5 per cent., of these died. The treatment was resorted to from the fourth to the seventh day in 126 cases; 30 of these, or 23.8 per cent., died. Out of 112 cases treated later than the seventh day, 39, or 35 per cent., died. The histories of 110 cases afforded evidence of the influence of the injected serum upon the diplococci; in 100 of them the diplococci disappeared and lost viability quickly; in 10 instances the elimination of the organisms was slow. In several cases which recovered the spinal exudate was purulent to begin with, but rapidly cleared under the influence of the injections. It was also found, in favourable cases going on to recovery, that, correlated with the disappearance of the diplococci and the clearing of the spinal exudate, there was a fall, often very rapid and even critical, in the number of leucocytes in the general blood stream. The general conclusion at which the authors arrive is as follows: "It is our belief that the analyses of histories of cases of epidemic meningitis which have been presented in this article furnish convincing proof that the antimeningitis serum when used by the subdural method of injection, in suitable doses and at proper intervals, is capable of reducing the period of illness; of preventing, in large measure, the chronic lesions and types of the infection; of bringing about complete restoration to health in all but a very small number of the recovered, thus lessening the serious, deforming, and permanent consequences of meningitis; and of greatly diminishing the fatalities due to the disease."

47. Atoxyl as a Tonic.

SCHACHT (*Med. Klinik*, September 13th, 1908) has systematically employed atoxyl during five years with excellent results and no harmful secondary effects. He gives intramuscular injections usually into the gluteal region, not too near the ischium, using slight massage afterwards to distribute the drug. Intravenous injections he thinks unnecessary. Out of all his cases he has never once observed any harmful effect or local irritation, a course taking one month when the injections were given every second day. He usually gave atoxyl in single doses as follows: 0.02, 0.04, 0.06, 0.08, 0.10, 0.12, 0.15, 0.15, 0.15,

0.15, 0.12, 1.10, 0.08, 0.06, 0.04, 0.02 gram, altogether 1½ grams, a small amount compared with that recommended in recent works. Three to five times as much arsenic is thus carried into the blood stream as is introduced when Fowler's solution or Asiatic pills are employed, and Schacht believes that the above dose may be safely increased. For the use of injections he recommends small bulbs containing the solution, which can be safely sterilized without destruction of the atoxyl solution. A 10 per cent. solution must be frequently renewed, since part of the atoxyl easily crystallizes out, and in this way danger of decomposition is also lessened. Atoxyl proved successful in the following diseases, where formerly arsenic seemed indicated, that is, chlorosis or anaemia, primary following malaria, or associated with nervous diseases, Basedow's disease, tuberculosis, convalescence after infectious diseases, general conditions of weakness, malnutrition, etc. Increase in good health, weight, red corpuscles, and haemoglobin always occurred, atoxyl proving effective in cases where the other arsenic preparations were either not tolerated or without effect. Schacht attributes accidents and failure to the use of excessive doses employed in attempts to find in atoxyl a specific for sleeping sickness, syphilis, pellagra, carcinoma, etc.

48. Vaccination of Bovines against Tuberculosis.

Calmette and Guerin (*Ann. de l'Inst. Pasteur*, September, 1908) have made a further study of immunization by the alimentary route against tuberculosis, and conclude that by the ingestion of virulent tubercle bacilli, or of bacilli modified by heat, a relative degree of immunity may be conferred on either young or adult bovines. When at a later period animals thus treated are tested by causing them to ingest a large dose of virulent bacilli invariably fatal for the controls, one finds that at the end of four to six months they remain unaffected; that they do not react to tuberculin; and that their mesenteric, mediastinal, bronchial and retropharyngeal glands no longer harbour tubercle bacilli, inoculation of such glandular material being harmless for guinea-pigs. But experiments continued for a sufficiently prolonged period do not justify the assertion that these animals are capable for a longer period than a year of resisting artificial infection by the digestive tract or natural infection by cohabitation. When, eight or twelve months after having resisted a large test dose administered by the alimentary tract, the vaccinated bovines receive an intravenous injection of virulent bacilli in sufficient dosage to kill the controls in four or five weeks, it is found that the vaccinated animals, after a short period of malaise, maintain for six or eight months every appearance of perfect health. Nevertheless, they retain in their bronchial and mediastinal glands virulent bacilli capable of producing tuberculosis in guinea-pigs. These bacilli give no clinical manifestation of their presence, not even when the tuberculin test is applied; but after a period of delay, lasting from about six to eight months, the immunity of the animal disappears, and the bacilli present are then capable of setting up tuberculous lesions. Thus, cultures of tubercle bacilli, when introduced by the digestive tract, are finally absorbed in the mesenteric glands when not present in sufficient numbers to provoke lesions, but when introduced intravenously the bacilli remain alive and virulent in the groups of lymphatic glands draining the thoracic organs. Animals which are tuberculous or have been sensitized to tuberculin by two or three large injections of this substance in the veins exhibit a very marked resistance to reinfection or to the severer forms of infection by natural or artificial means, even when the tests are applied by the intravenous method. This resistance, though less in degree, seems to be of the same nature as that conferred by various methods of vaccination, such as: (1) Intravenous inoculation of human or bovine bacilli (Behring, Koch, and Schültz), or of homogeneous bacilli (Arloing); (2) subcutaneous inoculation of similar bacilli (Lignières, Arloing); or (3) subcutaneous insertion of reed sacs treated with collodion and containing cultures of bovine or human viruses (Heymans). These methods of vaccination do not produce a true immunity, since the animals so treated, though failing to react to tuberculin, continue to harbour in their bodies living and virulent bacilli, which are capable, when the animal's resistance is on the wane, of producing in their host grave lesions.

49. Cocaine and Novocain.

Verderame (*Zeit. für Augenheilk.*, xviii, p. 191) has made experiments to test the relative deleterious action of cocaine and novocain upon the tissues. He decides that novocain is more likely to cause corneal lesions and detachment of the epithelium. When injected under the conjunctiva, novocain causes degeneration of the cornea. It is less anaesthetic than cocaine, and has only one advantage, it does not dilate the pupil. Injections into the anterior chamber cause well-marked uveal irritation, associated with alterations in the corneal endothelium and parenchyma.

PATHOLOGY.

50. Protozoa in Pathology.

Frederick G. Novy (*Proceedings of the Pathological Society of Philadelphia*, 1907) surveys the progress which has taken place in pathology during the half century which has elapsed since the organization of the society, with especial reference to the rôle of protozoa in pathology. In 1857 Pasteur published his first study on the mysterious phenomenon of fermentation. He looked upon the motile organisms which he encountered as animals or infusoria. Before two decades had passed the botanist laid claim to all the bacteria, a claim undisputed until the recent development of interest in the spirochaetes. Pasteur's investigation of one of the first-known protozoal infections—namely, pébrine, or the silkworm disease—demonstrated the transmission of a protozoal infection. The author reviews in turn the chief circumstances of discovery and the means of study of amoebae, trypanosomata, spirochaetes, sporozoa. In regard to amoebae, which are not directly dependent upon the living host cell, pure culture is a useful and desirable, if not actually necessary, condition to a thorough investigation; and with the improvement of culture methods it cannot be too strongly urged that morphological studies be supplemented by cultivation tests. In regard to trypanosomata, after collecting the most important conclusions of all workers, the author asks the question whether *Tr. gambiense* may not have been originally a mere variety of *Tr. brucei* which has acquired its destructive properties by repeated and brief passages through man, effected by the tsetse flies. It is worth bearing in mind that the protozoa as well as the protophytes are easily influenced by environmental conditions even to the extent of giving rise to a number of distinct strains or varieties. The number of spirochaetes has steadily grown during the past few years, and it is hardly necessary to point out the importance of giving close attention to the presence of these organisms in view of the recognition of a spirochaete in the tumours of cancerous mice by Gaylord and Calkins and the questions it raises of their relation to the pathological process with which they are associated. In cancer, small-pox, scarlet fever, measles, yellow fever, rabies, and Rocky Mountain fever, protozoa have been credited with being the causative agents. The evidence, however, at present is either morphological or wholly speculative, and as such is open to doubt. It is only by exhaustive experimental tests and by the successful search for new methods that we may hope to gain the desired positive knowledge. Morphology alone seems powerless, and it must be supplemented by studies bearing on the physical, chemical and biological properties unless the crucial test—that of artificial cultivation—is first realized. In regard to modes of transmission, according to Stiles there are two general rules with reference to parasitics and disease. Diseases which are accidently spread by insects are caused by parasitic plants, particularly by bacteria, and those diseases which are dependent on insects or other arthropods for their dissemination and transmission are caused by parasitic animals, particularly by sporozoa and worms. To the first rule certain exceptions are known, but the second has been regarded as yet without exception, and the classification of certain organisms, as protozoa, is dependent upon it. The author brings forward considerations based upon analogy to show that the function of insects as active carriers of bacteria is a possibility which must be borne in mind. Hence the transmission of certain spirochaetal diseases by ticks does not afford a serious argument against the bacterial nature of the spirochaetes, and similarly, the part played by *Stegomyia* in the transmission of yellow fever does not necessarily imply a protozoal organism. In fact the evidence is strikingly suggestive of a spirochaete cause. An experimental solution of this question is desirable, and perhaps can be effected by injecting dialyzed and unaltered salt suspensions of the infected mosquito before the supposed life-cycle of the protozoon has been completed.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

51. Duodenal Diabetes Mellitus.

A. HERLITZKA (*Giorn. d. R. Accad. di Med.*, Turin, 1908, lxxi, p. 57), after discussing the diabetes described by Pflüger in 1907 as due to removal of the duodenum or to separation of the duodenum from the pancreas in the frog, describes his own experiments. In these he attempted to paralyse the sympathetic nerve cells in the frog's duodenum by the injection of vaseline to see whether the frog would then develop glycosuria. Accordingly he injected pure vaseline into the duodenums of a number of frogs; some developed a slight transient glycosuria. Into other frogs he similarly injected vaseline containing up to 2 per cent. of nicotine; they all developed in one to three days marked glycosuria, lasting a week or until death. With yet other frogs he injected the nicotinized vaseline into the dorsal lymph sac; a few of these developed transient glycosuria after one to six days. Herlitzka concludes that duodenal diabetes is due to interference with the action of ganglia situated in the wall of the duodenum, and controlling reflexly the internal secretion of the pancreas; he adds that these ganglia are no doubt part of the sympathetic nervous system. In 1907 Pflüger noted that removal of the pancreas in the frog, or even laceration of the mesentery between the pancreas and duodenum without any injury to the pancreas, gave rise to true glycosuria. A. Visentini (*Il Morgagni*, Milan, 1908, l, p. 479) discusses this duodenal diabetes, quoting from the literature; several German experimenters have failed to produce glycosuria in dogs by extirpation of the duodenum, or at most have found a transient glycosuria after this severe operation. Visentini removed the duodenum in three dogs, leaving the pancreas intact, and forming an external biliary fistula; death followed on the third, fourth, and twentieth days respectively, but no glycosuria was observed. In five other dogs he removed the duodenum and with it the greater part of the pancreas, leaving behind only the tail of the pancreas near the spleen. Death followed in two to eleven days, but no glycosuria occurred in any case. In the first three cases a trace of duodenal tissue—that around the ampulla of Vater—was left behind, but can hardly have been enough to protect the animals from duodenal glycosuria, if such a condition exists. Minkowski (1908) removed (from dogs?) first the greater part of the pancreas, and at a second operation the duodenum; no diabetes was produced. But when, at a third operation, the remaining fragment of pancreas was taken away, severe glycosuria at once followed. Visentini quotes the experiments of Gaultier (1908), who found that cauterizing the duodenal mucosa with silver nitrate produced severe glycosuria, lasting till death in four and eleven days in two dogs; Eichler and Silbergleit (1908), on the other hand, only obtained a transient glycosuria, the duodenal mucosa having been cauterized with caustic soda or with Paquelin's cautery.

52. Percutaneous Tuberculin Reaction.

E. MORO (*Muench. med. Woch.*, September 29th, 1908) has made some observations with regard to the percutaneous tuberculin reaction, which appear to him to be of importance. First, he records that when tuberculin has been rubbed into the skin at suitable situations, the reaction has occurred not only in the site of the application, but also in a situation placed absolutely symmetrically. Next, he reports that the reaction occasionally appears disseminated at some distances from the site of application. In one case he observed a unilateral girdle form of reaction following the local reaction. In this case the tuberculin ointment was rubbed into the skin of the abdomen. From these three types of reaction he deduces that the direct toxic action of the tuberculin cannot have produced the changes, but that it may be accepted that the appearances depended on some effect acting on the central nervous system. He further noticed that when pure lanolin is rubbed in the skin no reaction is produced, but when tuberculin lanolin is rubbed in one place and pure lanolin is rubbed into another in the same patient a reaction was noticed in the site of the latter. This lanolin reaction was usually less severe than the tuberculin reaction, and was sometimes later in appearing, but was typical. Further, he was able to watch the entire disappearance of lichen scrofulosorum after local treatment with tuberculin ointment. He states that this disappearance was incomprehensible until he learnt that the central nervous system took an active part in the production of the tuberculin reactions. He therefore believes that the percutaneous tuberculin reaction is chiefly a vasomotor phenomenon, or, as he defines it later on, an angioneurotic inflammatory phenomenon. Having come to this conclusion, he proceeds to argue that the same must apply to the conjunctival and to the cutaneous reactions to tuberculin, and also to the subcutaneous reactions. In raising the question whether the reactions are due to the intervention of an antibody, he states that if an antibody is to be excluded a specific peculiar irritability of the nervous system in tuberculous subjects must be assumed. This he describes as a specific nervous "allergy." He leaves it undecided whether this nervous allergy or the tuberculin antibody is to be accepted. He appears, however, to lean more in favour of the purely nervous theory. On the other hand, he cites a number of phenomena which would speak rather for the second solution. These include the absence of the reaction in the last stage of tuberculosis, the absence immediately after the appearance of the measles rash, the absence of the reaction after prolonged treatment with tuberculin, the exacerbation of old reaction foci on repeated tuberculin applications, Koch's focal reaction, the accelerated reaction in connexion with a repetition of the test, the so-called secondary tuberculin reaction, and the long incubation period of the apparent inflammatory phenomenon.

53. Bilateral Pleural Effusion after Radical Cure of Hernia.

MAUCLAIRE has recently insisted upon the liability of a radical cure of inguinal hernia to be followed by pulmonary embolism. Mollard (*Lyon Méd.*, November 29th, 1908) records a case in which the infarct was accompanied by bilateral effusion as well as by haemoptysis, a combination of signs which at first caused a suspicion of tuberculosis. His patient, a man aged 20, with a good personal and family history, was operated upon for left inguinal hernia on January 17th. The operation was very simple, and the cicatrix formed normally without inflammation, and with no visible sign of phlebitis about the leg or abdominal wall. The temperature rose on January 20th, and remained above normal until the 24th, when sputum stained with blood was first seen. The slight haemoptysis continued, and the temperature, after being normal for a week, rose again. On February 3rd signs of pleural effusion were found on both sides, more particularly on the right, from which some rose-coloured serum was obtained. This on examination was found to contain many red blood corpuscles, endothelial cells, and haemocytes (polynuclear 79 per cent., lymphocytes and other mononuclear 21 per cent.). On February 15th all signs of effusion had disappeared, and the patient seemed perfectly well. There was throughout a striking contrast between the gravity of the chest symptoms and the insignificant disturbance of general health. The absence of tubercle bacilli in the sputum, the rapidly favourable evolution of the affection, and, later, the negative result of inoculation, were considered sufficient for a diagnosis of post-operative infarct. It is probable that such embolism is due to a phlebitis not sufficient to block the vein or to interfere with healing of the wound by first intention. According to Nélaton, such an occurrence is frequent after operations in general, and explains slight pyrexial and pleuritic pains which have hitherto been attributed to chill.

SURGERY.

54. The Treatment of Undescended Testis with Inguinal Hernia.

COLEY, of New York (*Annals of Surgery*, September, 1908), discusses the treatment of abnormalities in the transit of the testis which are associated with inguinal hernia, and publishes in support of his views on this subject an analysis of 126 cases of such mixed defects on which he has personally operated. This surgeon states that there is by no means uniformity of opinion as to the indications for surgical intervention in such cases, and that also a wide difference exists as to the best methods of operation. Furthermore, but little information has hitherto been

afforded concerning the results of operative treatment. His own observations, as well as a careful study of the reports of other surgeons, have led Dr. Coley to certain definite and important conclusions. The undescended testis, he holds, is almost invariably of little or no functional value. It often gives rise to considerable pain, and is more subject to inflammatory attacks than the normally descended organ. Possibly, though this is by no means proven, it is more subject to malignant disease. The undescended testis should never be sacrificed, the author holds, in children, and very rarely in adults, as it has been proved that it is possible to effect a radical cure of the hernia without the removal of the organ. In childhood the testis, even if it never attains any functional value, is nevertheless of use in developing the male characteristics of the child as well as in promoting its general health. In the adult it should be retained for its influence upon the mentality of the subject, if for no other reason. An operation should seldom be performed under the age of 8 years, unless the accompanying hernia demands surgical intervention. Those who advise such treatment on very young children ignore the fact that in a large proportion of cases of undescended testis in such subjects the organ will reach the scrotum by the age of puberty without surgical interference. An exception to this rule, however, occurs when the defect is bilateral. Abdominal ectopia, unless bilateral, had better be left untreated, as operative intervention in such cases is difficult and by no means free from risk. The main principles of any operation likely to do good must be free opening of the inguinal canal by Bassini's incision; thorough freeing of the testis from any adhesions or peritoneal bands, even with the sacrifice of some of the veins if necessary; depression of the testis into the scrotum; suturing of the canal without transplantation of the cord. The present tendency in favour of giving up all forms of suturing the testis, either to the scrotum, the other testis, or the thigh, is, the author believes, fully justified. As satisfactory results may be obtained without cutting away all the structures of the cord except the vas and its vessels, this radical step, it is held, is very seldom indicated. In the same number of the *Annals of Surgery* Dr. Starr of Toronto describes a new operation for undescended testis which he has practised, he states, with very excellent results, and which he thinks can be applied with good prospects of success in cases of retention of the testis in the inguinal canal just within or outside the external ring. In this operation the testis after the coverings of the cord have been dissected away, is sutured to the lower end of a pouch made by finger pressure and blunt dissection in the scrotum, and is there secured by a loop of silver wire, which serves as a splint to retain it in its depressed position.

55. The Influence of Trephining on Optic Neuritis.

VON HIPPEL (*XXXV Versamml. d. ophth. Gesellsch.*, Heidelberg, August, 1908) draws the following conclusions from the study of 221 cases where optic neuritis was present and the skull was trephined. In the majority of cases the neuritis improved for a long time, and sometimes permanently. Improvement in vision is marked if the operation be performed early, but when the remaining vision is very small there is no such improvement. In most of the cases under examination the operation was delayed too long. In those cases where vision is improved life is also prolonged, and so the operation is advisable from this point of view. Trephining may result in complete cure, for in many cases which have all the clinical aspects of cerebral tumour there is really only a "false tumour," a chronic hydrocephalus, an acute hydrocephalus, or a serous meningitis. If these cases be not operated upon the result is sometimes good, but they often die. The risks of the operation are by no means negligible, but when it is undertaken solely to improve sight the danger is much less than in trephining for other reasons. The total mortality of all cases combined is, according to von Bergmann, no less than 47.7 per cent. The death-rate can be diminished by taking certain precautions, such as anaesthetizing with chloroform and not with ether, the two-stage operation, cocainizing of the dura, slow escape of the cerebro-spinal fluid, immediate suture of the wound, and simple trephining, instead of osteoplastic methods. It is not always necessary to open the dura to reduce the intracerebral pressure. Cerebral hernia is necessary if we are to obtain the desired result, but we must keep it within reasonable dimensions. If the tumour can be localized we should trephine over it, otherwise it is best to select the right temporal region. In spite of possible bad results, it is always correct to trephine as soon as sight begins to fail.

OBSTETRICS.

56. Puerperal Fever and its Treatment.

MAX HENKEL (*Deut. med. Woch.*, Nos. 43, 44, and 45, 1908) shows that sepsis and pyaemia in the puerperium are caused by various types of streptococci, some of which he believes are introduced from without and others are already in the vagina. It is, in his opinion, impossible at present to determine which forms present the greatest dangers to women, and all he is inclined to say is that the Krönig-Menge streptococci are non-pathogenic. Even the appearance of haemolysis does not necessarily carry with it the most marked virulence, although he believes that the prognosis of an infection with streptococci, in which the cocci are found in numbers in the blood and present Schottmüller's phenomenon, is extremely serious. The author discusses at some length the bacteriology of puerperal fevers, and then passes on to speak of the prognosis. In the first place, he finds that the diminution of the neutrophile leucocytes and the loss of red cells, which Kownatzky regarded as a bad sign, cannot be definitely relied on, and offers very little practical value. The behaviour of the pulse and temperature are important prognostic signs when taken in conjunction with the general condition and controlled frequently. The fact that recent haemorrhage, as well as other occurrences, may influence both must render a mere objective determination of the pulse and temperature valueless. The possible source of infection can often be determined, and when scratches and other traumatic lesions can be discovered it will be found that the more extensive these are the greater is the danger of infection. He deals with the methods of conducting the labour as being of importance for the prognosis of an infection, and also concerns himself with the influence of decomposition of the liquor amnii on the prognosis. The way the uterus undergoes inversion and the presence of blood clots are also points which should be regarded. These and many other details are considered as influencing the chances of infection during the puerperium, and Henkel hints from time to time at various preventive measures, although he attempts to limit his remarks to the actual infection, its prognosis, and its treatment. Passing on to the latter, he arrives at a conclusion, at the end of a somewhat lengthy argument, that puerperal sepsis finds its best treatment in the surgical removal of the uterus, and that puerperal pyaemia ought to be treated by ligature of the thrombosed veins. He holds that serumtherapy, up to the present, has been a failure; that collargol has scarcely a better record; that the results obtained from those drugs, like nucleogen, which induce a profuse leucocytosis, have not been of such a character as to induce the obstetrician to pin his faith to their action, and that other methods of treatment are too symptomatic to be considered as curative. He dwells on the indications for the extirpation of the uterus, which he considers should be performed vaginally, and for the ligature of the thrombosed veins. He insists on the proper time being chosen for these procedures, and feels justified in predicting far better results than have hitherto been achieved, if the indications are well defined and carefully adhered to.

GYNAECOLOGY.

57. The Menopause.

VINAY (quoted in the *Journ. de Méd. et de Chirurg.*, September 10th, 1908) first refers to the functions of the ovary—namely, the expulsion of the ovum, the destruction of toxins which are formed during the menstrual period, and the production of an internal secretion which neutralizes the vasomotor toxins and which has an influence both on the uterus and on the whole body. This secretion possesses several properties. It reduces in a very marked way the blood pressure, and, when absent, hypertension occurs; this takes place when the menopause sets in. Secondly, it influences general nutrition by stirring up internal combustion and by increasing oxidation. Thirdly, it acts on the bulbo-medullary nervous system, and, when absent, tachycardia and anginal attacks are prone to occur. Fourthly, the internal secretion possesses a destructive action on certain waste products of the organism and prevents toxaemia. Amongst the most serious manifestations arising from deficient ovarian function the author refers to are hypertension, followed by cardiac troubles and tachycardia. At first the symptoms are vague, the patients complaining of palpitation, which becomes more and more frequent; later, attacks of dyspnoea occur, or, in other cases, attacks of paroxysmal tachy-

cardia, followed by vasomotor troubles (skin pallor, cold extremities, anginal attacks). Oedema of the legs only occurs at a late stage, and is often accompanied by slight albuminuria which is of a transitory nature. Remissions of the symptoms occur from time to time, the attacks lasting from six to seven days. Although during these attacks a high blood pressure is the rule, in some cases the pressure is subnormal, and in such cases marked muscular weakness and moral depression are present; the cardiac action is weak, and these disturbances are liable to last for weeks or months at a time. Amongst less common manifestations of the menopause the author refers to symptoms connected with the bladder and kidneys. Lumbar pain, violent headache, vomiting, diminution of urine, and sometimes albuminuria, are not very uncommonly found to occur. In thin women with a prolapsed kidney the organ can be felt to become painful and swollen, it becomes less movable and a generalized oedema may occur, together with a marked diminution in the amount of urine. If chronic nephritis be present there may be a sudden increase in the symptoms of the disease at the onset of the menopause. Urinary lithiasis sometimes occurs and may cause marked pain, and the presence of vesical calculi may give rise to troublesome symptoms. Pain localized to the neck of the bladder is a troublesome and often very persistent symptom arising during the menopause. The pain begins at the commencement of micturition and diminishes as this act is accomplished. Haematuria has also been known to occur, often coinciding with attacks of uterine bleeding. As regards treatment of the symptoms, for the uterine bleedings injections of hot water are often efficacious, and when combined with warm baths the insomnia, vertigo, palpitation, etc., often yield readily. If haemostatic drugs are necessary ergot should be given either by the mouth or subcutaneously, and in severe cases of uterine haemorrhage a mixture of the fluid extracts of hydrastis, hamamelis, and viburnum may be employed. Solution of adrenalin may be used, but its marked vaso-constrictive effect is always followed by great vaso-dilatation. Other drugs which may be used are stypticin, hydrastis canadensis, and calcium chloride. For the congestive attacks purgatives are useful, especially the saline purgatives, which are of great value in patients who suffer from flushings of heat, tachycardia, vertigo, etc. For the nervous depression arsenic, iron, and the glycero-phosphates are of value, either singly or combined. Sedatives and hypnotics, such as opium, chloral, bromides, and sulphonal, are better avoided. For the nervous excitement one may employ hot baths, valerian, belladonna, etc., and for the pains antipyrin.

58. Diagnosis of Uterine Retrodeviations.

LAPOINTE (*La Clinique*, May 29th, 1908) writes that retrodeviation means the displacement of the uterine fundus backwards, with displacement of the cervix forwards. He finds that retroflexion is always associated with retroversion. The retrodeviated uterus is either movable or fixed by adhesions; these are the result of lesions of the adnexa, which are a cause of retrodeviation. In most cases a displacement is tolerated for a time at least without giving rise to much discomfort; an accident, such as a fall or an effort, may call attention to the condition. Pain and menstrual disturbance are the usual symptoms; there is a feeling of weight and radiating lumbar pain. Menorrhagia is a common symptom, and may be sufficiently severe to cause anaemia. In young girls a profuse and painful flow is the only symptom. In women who have reached the age of the menopause, the abnormal position tends to prolong the menstrual period. Leucorrhoea may simulate a "false metritis"; difficulty of micturition and defaecation are unusual in these cases, but pressure of the cervix on the neck of the bladder is liable to provoke frequent and painful micturition. Constipation is a common symptom, and is often accompanied by headaches, indigestion, and neurasthenic symptoms. Pain and pelvic discomfort are aggravated by the presence of adhesions and the disease, possibly latent, which has produced them. A vaginal examination shows the cervix to be lying directly behind the symphysis and lower than is normal; the fornices are empty, and the fundus is detected in the hollow of the sacrum; it is then possible to determine whether the uterus is simply retroverted or whether it is acutely flexed. The mobility of the uterus depends upon the condition of the adnexa; when the latter are swollen, painful, and adherent the uterus is generally adherent, fixed, and irreducible. Efforts to reduce it may result in the rupture of a pyosalpinx. When there are no adhesions the uterus is replaceable by digital manipulations; the fundus is pressed up and forward by the fingers inserted in the vagina, the hand on the abdomen exerting forward pressure on it while the fingers in the vagina assist by pressing the cervix backwards. Should the uterus be entrapped in Douglas's pouch this manipulatory effort is unsuccessful. The pressure should be slow and continued for some length of time; it is facilitated if the patient assumes the genu-pectoral position. The cervix may be seized and drawn down, with the result that the fundus also descends, and two fingers can then be passed into the posterior pouch to assist in replacing it. If neither method is successful the uterus is probably fixed by adhesions. In virgins it is better to insert the fingers into the rectum instead of the vagina. When the abdominal wall is very thick it is possible to mistake for a retroflexion a fibroma or adherent tube or a collection of blood or pus occupying the pouch of Douglas. A careful vaginal examination is required to determine the relation of the mass to the uterus. When the uterus is involved in a mass of inflammatory adnexial adhesions the prognosis must depend upon the character and extent of the pelvic mischief. A retrodeviation, however simple, does not recover spontaneously; it is generally increased by pelvic affections, menstrual disorders, and neurasthenia. The advent of the menopause aggravates the symptoms; it is only in senile involution that the misplacement ceases to exercise an unfavourable effect. These misplacements are one of the causes of sterility; conception often occurs promptly when the position has been corrected. The presence of inflammation and adhesions tends to prevent conception, and there is a liability to tubal pregnancy. When conception does occur in a retrodeviated uterus the patient is exposed to unusual risks, with an increase of functional trouble and *malaise*. In the fourth month it is not uncommon for the gravid uterus to reduce itself spontaneously; if this does not happen an abortion will generally result. The chief danger in these cases is from pressure on the bladder and urinary system, which has been known to produce a fatal rupture, or death from uraemia. A woman who shows the usual signs of pregnancy and who complains of bladder disturbance, should be carefully examined to decide the position of the uterus. The further pregnancy has advanced the more difficult it is to recognize the cervix pressed up behind the symphysis, while a large soft mass, the gravid uterus, fills the pelvis.

THERAPEUTICS.

59. The Treatment of Neuralgia by Alcohol Injections.

IN 1903 Schlösser described a new method of treating neuralgia by injections of alcohol. Since that time a few authors have written on this subject, but practically no new method or material modification of the original method has been suggested. W. Alexander (*Berl. klin. Woch.*, November 30th, 1908) states that he has adhered to Schlösser's technique. It was found that 70 to 80 per cent. alcohol damages a nerve with which it comes in contact. The idea of utilizing this action was first awakened in connexion with convulsive affections of motor nerves, such as the tic convulsif. Sensory nerves were also chosen for the action in painful conditions like neuralgia. The nerves were found after such treatment to be degenerate, and eventually to become absorbed. The symptomatic effect of the injections is to produce anaesthesia of sensory nerves or paresis and paralysis in motor nerves. It has further been found that the sensory nerve fibres are less resistant toward the effect of alcohol than are the motor fibres. Leaving the question of applying the idea for convulsive affections, he limits himself to the injections for neuralgias. Good results have been obtained by many operators in sciatica, but Fischler and Erb have seen in man, and Finkelnburg in animals, that the motor fibres are too markedly affected by the injections to warrant the procedure. The author produced a marked paralysis of several months' duration of the peronei. In this case he injected 1 c.cm. of a 75 per cent. alcohol into the sciatic nerve. He says that it may be possible to avoid such occurrences by employing weaker alcohol. In the treatment of pain in pure sensory nerves, such as the trigeminus, extraordinarily good results follow. He describes the technique somewhat as follows: The alcohol can be injected either peripherally or centrally—that is, in the case of the trigeminal nerve at the foramen rotundum or ovale. Since it is never certain whether the affected portion of the nerve is central or peripheral, the author first tries the effect of the former, and, when this fails, goes closer to the brain. It is still uncertain whether recurrences take place more frequently after the peripheral than after the central injections. If this proves to be so,

it will become necessary to inject centrally in every case. The injection syringe has a capacity of 2 c.cm., and a variety of different shaped needles are fitted. The walls of the needles are thickish, as it is important to have them as strong as possible to ensure against breaking. The point is rounded, so that vessels are not injured. The skin is anaesthetized by Schleich's infiltration, but no further anaesthesia is permissible, as it is often important to ascertain whether pain is being produced or not. For peripheral injection in trigeminal neuralgia the needle is introduced straight down to the bone in the direction of the supra-orbital, infraorbital, or mental foramen, and an attempt is made to enter the canal for a short distance with the needle. This is not difficult in the infraorbital canal. The patient usually calls out at this time. The pain should correspond to the pain felt in the neuralgic attacks. If the pain corresponds, the injection is immediately begun. No blood may be issuing from the cannula. The syringe is then applied and 0.1 c.cm. to 0.2 c.cm. is slowly injected. This produces acute pain of short duration. As soon as this is over the same quantity is again injected, and at each successive injection of the small quantity the pain which follows is less. After from 2 to 4 c.cm. has been injected the area is analgesic. Central injections are more difficult, but if the operator has taken the trouble to study the anatomy of the various nerves carefully and practised the injections on the dead body the difficulties are overcome. No one should attempt to inject centrally without such previous study. After a successful injection one or more attacks of pain not infrequently appear. However, within a short time no more pain sets in and the neuralgia becomes cured. Each branch must be injected separately until no further pain occurs. The author reports that even when the pain is due to organic disease of the brain it can be relieved in this way, and cites a case in support of this. In comparing this method with other forms of treatment he mentions resection of nerves, which has the disadvantage of requiring a general anaesthetic, and, further, of leaving an unsightly scar. Removal of the Gasserian ganglion is a dangerous operation, and is only performed for cases in which the pain is intolerable. He contends that where the removal of the ganglion can cure, alcoholic injections can also cure, and that the latter must be preferred. In some cases it is necessary to repeat the treatment for recurrences, but he quotes a case to show that the patient willingly submitted to the injection for the second time, and that it was permanently successful. The supposed dangers of the procedure are necrosis of the skin, paralysis of motor nerves, and injury to large vessels. He has not met with any of these ill-effects save the temporary inclusion of motor nerves. In conclusion, he deals with the indications for the injections, and particularly in the distinction between true neuralgia and hysterical or neurasthenic pain. It is easy to determine whether the pain has a true localized character and radiates in a characteristic manner. He pleads for a freer use of this method.

60. Arsacetin in Syphilis.

In speaking favourably of a number of arsenic preparations in the treatment of syphilis, A. Neisser (*Deut. med. Woch.*, August 27th, 1908) lays emphasis on the fact that mercury is a true specific for this disease, and he does not suggest that mercury should be replaced by arsenic. Given in suitable doses, mercury can remove the symptoms, kill the virus, and therefore cure the patient of the disease without giving rise to toxic symptoms. He is, however, able to show that arsenic is also capable of curing syphilis. Atoxyl was first used in the treatment of syphilis by Uhlenhuth, Hoffmann, Roscher, and Salmon, after extensive animal experiment. The results obtained on man are, however, not of such a nature to admit of definite deductions being made until many years have passed. Uhlenhuth, the author, and Metchnikoff have shown in animals that arsenic can render the syphilitic poison in the animal body absolutely harmless without producing toxic effects. Some animals even react better to certain arsenic preparations than to mercury. Arsenious acid, even in large doses, proved itself incapable of achieving this end. Given by subcutaneous injection, it produced abscesses, infiltrations, and necrosis. Neisser is, however, prepared to believe that in combination with some other arsenic preparation, and given by the mouth, it may yet be found useful, as it has been in experimental trypanosomiasis. Cacodylates are not of use. In his experiments, atoxyl exhibited both preventive and curative actions. The former could be demonstrated by giving the material from five to seven days after infection, and in one case even thirteen days after. All the animals remained healthy when atoxyl was given in sufficient doses. No toxic effects manifested themselves. Even the latent virus was killed with atoxyl in animals. Next the author reports on his experiments with a new atoxyl preparation which owes its existence to P. Ehrlich, and which is called arsacetin. The aim which Ehrlich had in view was to prepare an arsenic compound which should possess the same action as atoxyl without being so toxic. It is especially the danger of optic atrophy which has caused many clinicians to refuse to use atoxyl altogether. The danger of atoxyl, however, has been shown to be partly due to impurities, and the French authors insist that the German atoxyl was responsible for far more accidents than the French atoxyl, and that the latter was purer. Lately the German preparation has been altered, and it is to be hoped that blindness and other serious effects will not occur in the future. Arsacetin or sodium acetyl-(p)-amidophenyl arsenate is stable even at high temperatures. It proved to be far less toxic than atoxyl when compared in consideration of the arsenic content; 5 grams of atoxyl is equal to 6 grams of arsacetin. In animal experiment Neisser found that arsacetin was at least as powerful a curative agent in syphilis as atoxyl. He therefore has employed it in a number of his syphilis patients, and believes that he can recommend its use. He is of opinion that the atoxyl preparations and mercury can be applied simultaneously with advantage. The certainty that mercury acts well renders it inadvisable to replace it by a new drug whose action is less well known. But as animal experiment has yielded such good results, he considers that use should be made of the new preparations. So far none of his patients have exhibited any undesired effects from arsacetin, save a slight disturbance of the stomach and intestine. The simultaneous drinking of an alkaline water or taking of burned magnesia appears to remove even this action. Patients suffering from parenchymatous affections of the organs should not be given arsacetin; those suffering from nephritis may be given it if care be exercised, but if the kidney symptoms are increased the drug should be stopped at once. He gives injections of 0.6 gram of arsacetin on two consecutive days each week. He is uncertain whether the results would be equally satisfactory if an injection were given every fourth day. He has given the injections for periods up to ten weeks, and the maximum total quantity given in one course of treatment was 14 grams. The substance is given in 10 or 15 per cent. solution, but if the latter is employed it must be warmed, as arsacetin precipitates in this strength in the cold. It can also be given internally. The substance can be obtained from the "Farbenfabrik" in Höchst a. Main (formerly Meister, Lucius, and Brüning).

PATHOLOGY.

61. Etiology of Chronic Nephritis.

Haven. Emerson (*Archives of Internal Medicine*, June, 1908) undertook experiments upon dogs to effect changes in the blood supply of the kidneys. Various means were used, such as inhalation of alcohol, ether, chloroform, amyl nitrite; intranephritic injection of alcohol (25 per cent.), adrenalin chloride (1 in 1,000); intravenous injections of acetate of lead (10 per cent.), adrenalin chloride (0.1 per cent.), gelatine (5 per cent.). Only dogs secreting urine free from albumen were used, and this led to the rejection of eleven dogs in the choice of fourteen. Their diet was carefully regulated, and their requirements in regard to exercise during the period of experiment were regarded. Seeing that circulatory disturbance resulting in a stagnation of venous blood, or a diminution in the supply of arterial blood is an almost constant accompaniment of the accumulation of connective tissue it was sought to produce the change experimentally in the hope of arriving at some conclusions relative to the effect of the reagents used. The paper contains a complete and pertinent discussion on the etiology of chronic nephritis. The causes usually recognized come under the four headings: (1) Infectious diseases; (2) gout, rheumatism, syphilis, plumbism; (3) vices of appetite; (4) errors persistent or frequently repeated in the circulation—for example, cardiac disease, etc. The author concludes that chronic nephritis in man is due to conditions which have as a common factor a more or less severe and prolonged stagnation in renal blood supply, and although this factor is often accompanied by the presence of irritants which we recognize as injurious to the kidney substance, inefficient blood supply alone will cause, first an error in the function and later an alteration in the structure of the kidney. The fault in function will cause more or less disturbance in the body at large according to the degree of circulatory compensation which can be maintained.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

62. The Heart in Convalescence from Acute Infectious Disease.

BEVERLEY ROBINSON (*Amer. Journ. Med. Sci.*, December, 1908) considers the care of a patient during the early days of convalescence from an acute infectious disease, in view of its influence on the comfort and usefulness of his after-life, a matter of prime importance, and one which receives less than deserved attention in medical textbooks. And while the general nutrition and the muscular and nervous systems all require consideration at these times, it is the heart which most often and most urgently calls for careful watching and governing. Especially is this so in typhoid fever, diphtheria, influenza, pneumonia, and scarlet fever, and most of all, of course, in acute rheumatism; but this last, in consequence of the frequency with which it is associated with definite cardiac complications of the nature of endocarditis or pericarditis, forms a class of its own and does not come into the present consideration. The various toxins of these diseases, in cases of any severity and duration, produce certain definite pathological changes in the heart muscle and nerves which are more or less common to them all. The muscle bundles are separated by small lymphoid cells, the fibres are sometimes ruptured, the individual cells are swollen and show granular or fatty change, while the striae are feebly marked and the nuclei have often disappeared. Later the heart muscle may become hyaline or even fibrous. These changes may be general throughout the heart or may occur in discrete patches. The cardiac nerves show fatty infiltration and cloudiness of the sheaths and irregularity of the axis cylinders. The heart as a whole is flaccid, thin-walled, and easily torn, and often contains soft or sometimes fibrinous thrombi, especially on the right side. Sometimes, however, in cases of death from heart-weakness following an acute infectious disease, no organic change in the muscle or nerves is discoverable, though evident cardiac dilatation is present *post mortem*, and in these cases the real cause of the weakness is not known. Such changes being found at autopsies in these diseases, the author concludes that they are present in less degree during life, and that they extend beyond the acute stage of the disease into the early days of convalescence. In view of this assumption, how is the early part of the convalescence to be managed? The results of the author's experience have led him to the following practice: In typhoid fever the patient does not sit up until the temperature has been normal for seven to ten days. A pulse increased in frequency, irregular, and occasionally intermittent indicates that the sitting up must be restricted and watched, while the addition of a soft systolic mitral murmur with accentuation of the pulmonary second sound, or of a weak and toneless first sound and a feeble, rapid, irregular, sometimes intermittent heart's action, means that the sitting up should be discontinued altogether. In the absence of any of these the patient leaves his bed after a few days, and a little later begins to walk about the room, and their appearance at any time shows that advance has been too rapid, and that retreat must be made until the point is reached at which they disappear again. Other indications of too rapid advance are a subnormal temperature with diminution in the specific gravity and amount of the urine and the presence of a little albumen. Much more urgent danger signals still, as indicating a liability to sudden heart failure, are marked slowing of the pulse and heart. When these are present, attacks of acute dilatation, evidenced by sudden faintness, pallor, and blueness, or perhaps by sudden death, and due to failure in some cases of the muscle and in some cases of the nerves of the heart, are to be feared. They are specially apt to occur in convalescence from diphtheria. The special danger to the heart in scarlet fever is from the complicating nephritis or rheumatism in the third or fourth weeks of the disease giving rise to dilatation or endocarditis respectively. In pneumonia clotting of the blood is another danger, and one which is more commonly found in this than in any other infectious disease. As to treatment, Robinson emphasizes the prime importance of rest, enough in degree and in duration after acute infectious diseases in order to prevent cardiac dilatation with its unfortunate consequences immediate and remote. Rest for the mind is of no less importance than rest for the body. Enough rest, with maintenance of careful watch for any of the above-mentioned signs at each advance in the convalescence, is the one thing needful. Later in the convalescence, especially after typhoid fever and influenza, he has found the Nauheim treatment of great value. With regard to drugs, in the attacks of acute failure he finds strophanthus, followed at once by ammonia or alcohol, the most rapid and efficient heart stimulant. Adrenalin ($\frac{1}{20}$ grain) by mouth or hypodermically is of undoubted value. Strychnine and digitalis are of use sometimes. Clotting of blood in pneumonia may be guarded against by giving ammonium carbonate or citric acid, and after influenza quinine or, better, cinchona bark, has a special value as a general tonic and a protection against cardiac dilatation.

63. Radiculitis.

MIRAILLIÉ (*Journ. Méd. de Bruxelles*, September 10th, 1908) considers the subject of nerve-root inflammation under two main forms, according as the anterior or posterior roots are involved. When a motor root is involved the muscles which receive their innervation from this root become paretic or paralysed, and their muscular power progressively diminishes, the degree of the loss of motor power being proportional to the severity of the pathological process. The affected muscles atrophy and in severe lesions may completely disappear and antagonistic muscles bring about vicious attitudes which are permanent. Tendinous reflexes diminish and then disappear. Electrical examination of the affected muscles shows the classical signs of a lesion of the peripheral motor neuron. When the sensory roots are involved there occur feelings of painful swelling and heaviness, which become continuous more or less and interrupted from time to time by extremely violent paroxysms of pain—in Pott's disease they were described by Charcot as "pseudo-neuralgias"; in tabes they constitute the lightning pains. These pains are always very severe and definitely localized to certain regions, and from being at first paroxysmal they become gradually continuous. Déjerine has laid special importance on what is spoken of as "the sneezing sign," that is, a very acute pain occupying the whole extent of the region supplied by the affected root, and occurring when the patient sneezes. When the nerve root has become destroyed the pains diminish and may disappear, to be followed by alterations of sensibility, such as paraesthesia, and at the same time the "sneezing sign" disappears. On pressure the peripheral nerves are painful, but not so markedly as in peripheral neuritis. At the beginning of the trouble one finds on examination areas of hyperaesthesia, which later on become less sensitive than normal; the sensory disturbances show themselves in all the different forms of sensation—touch, pain, heat, and cold—and the deep, muscular and joint senses may be affected. Just as with the motor lesions the characteristics of the sensory lesions are their topography. Camus and Cézary and others have pointed out that in the area supplied by an affected root the sensory disturbances are not everywhere the same; in some parts there may be simply diminution of sensibility, in others true anaesthesia, or there may be a dissociation of sensory disturbances. Head and Campbell have shown that herpes zoster limited to the area of skin supplied by the affected root may occur. Langevin has described exanthemata with root distribution, and Ramon, Grenet, and Delille have observed purpura similarly distributed. In a certain number of these cases in which lumbar puncture has been carried out the cerebro-spinal fluid has shown a marked lymphocytosis, a certain sign of a meningeal lesion and therefore a confirmatory sign of a radiculitis. Clinically, some cases set in extremely abruptly and without premonitory symptoms; more often, however, a slower progress occurs, transitory pains first appear and later become permanent as the disease becomes established. Either the cranial or the spinal nerve roots may be affected and in the former case the fifth and the seventh nerves are especially liable to be involved. With brachial plexus lesions two forms occur, a total radiculitis (Duchenne-Erb type), and an inferior radiculitis with oculo-pupillary signs (Déjerine-Klumpke type). In the lower limbs there may be sciatic pain of root origin or pain of cauda equina distribution. Either one or many roots may be involved and consequently an infinite variety of forms may occur. Pure

motor and pure sensory root lesions are exceptional and most often a mixed form occurs. Radiculitis is diagnosed by the topographical distribution of sensory and motor disturbances, and can therefore be distinguished easily from multiple neuritis. From lesions of the spinal cord, such as haematomyelia, it may be very difficult to distinguish, and from syringomyelia and tabes it is to be distinguished by an absence of all other signs pointing to these diseases. Pathologically radiculitis should be limited to lesions of an inflammatory nature involving the nerve roots from their emergence from the cerebro-spinal axis to the foramina through which they pass. By this means are eliminated such lesions as traumatic injury, rupture, and tearing of the roots. It may occur as a primary affection or more usually as an affection following meningitis, polyneuritis or a spinal lesion. As to the causes of the condition, any infection can give rise to it and especially syphilis, and this particularly in radiculitis of the lower spinal roots. Next to syphilis, the commonest cause is tuberculosis, either a meningitis or caries of the spine. Gonorrhoeal conjunctivitis, cancer of the nerve roots, and alcoholism are also noted as causes. With regard to treatment, considering the frequency with which syphilis is associated as the cause, antisyphilitic treatment should be carried out with vigour, and in chronic cases surgical interference may be necessary.

SURGERY.

64. The Removal of a Cerebral Tumour.

In publishing the details of a case of fibro-sarcoma of the left island of Reil and first temporal lobe of the brain which was treated by operation, H. Oppenheimer and F. Krause discuss many points of interest in connexion with the diagnosis of cerebral tumour and with the symptomatology of cases dealt with surgically. The patient was 37 years of age, and complained chiefly of pain over the left eye and left temple. Other symptoms were loss of memory, defect of speech, giddiness, thirst, and depression. During a stay in a sanatorium attacks of severe headache, vomiting, and slowness of the pulse were seen. Lumbar puncture only revealed a slight increase of the pressure of the cerebro-spinal fluid. The speech defect was chiefly a sensory and amnesis aphasia. Reading was possible but mechanical; the patient did not understand what she read and there was paralexia. On trying to write she mixed up the letters. There was no hemianopia. On examination of the retinae, double stasis of the papillae, more marked on the left than the right, was detected. There was tenderness and dullness on percussing the left temporal region. From these signs and symptoms Oppenheimer made the diagnosis of tumour in the left hemisphere, probably in the left temporo-sphenoidal lobe. Krause operated, the procedure being carried out in two stages. The upper left temporal region was incised and a skin-bone flap measuring about 80 mm. in each direction was reflected. The dura mater scarcely pulsated and was tense, and through it a hard mass of about the size of a finger-nail was felt. This corresponded to the beginning of the Sylvian fissure. The second stage had to be undertaken on the following day on account of the increasing intracranial pressure. Consciousness had gradually diminished during the night, and the second operation could be performed without any anaesthesia. On opening the dura mater, a small adherent portion of the size of a pea was found. This lay superficial to the resistance, and the adherent portion of the brain was found to form a prolongation of a more deeply situated mass. The latter was covered above by the operculum and below by the first temporo-sphenoidal convolution, and was presumably pushing the island of Reil medianwards. It was shelled out with the finger. It measured 60 mm. by 56 mm. by 43 mm. The vascular attachments were few and easily dealt with. The bed of the tumour was plugged to arrest the bleeding, and the flap was replaced. On the evening of this day the patient was found to be speechless; the right arm was completely paralysed, and there was right-sided facial paralysis. The right leg was spastic. There was deviation of the eyes to the left. During the following days only interjections were uttered, the mind became considerably clearer, but severe general disturbance gave rise to anxiety. The speech improved considerably at the end of a week. The paralysis of the right arm and facial muscles persisted at first, but Krause predicted that it would pass off. She continued to improve from this time onwards, and in the course of the following weeks the power returned in the right arm. The speech remained highly deficient. Two months later it was found to be necessary to remove some protruding brain tissue. Six months later fresh cerebral symptoms led to a further operation, at which a tumour was removed, which the authors do not regard as a recurrence, but as a piece of the original tumour which had been left behind, and which had taken on fresh growth. The patient recovered well after this, and at the date of the report presented the appearance of a normal person. Her speech, however, was still defective, and her power of reading and writing was still limited, but these defects were improving daily. All the other cerebral symptoms had disappeared.

65. Prostatectomy.

Pauchet (*Arch. Prov. de Chir.*, No. 12, 1908), who has performed 113 prostatectomies, advocates Freyer's operation, which, he holds, gives satisfactory immediate results, and subsequently affords perfect relief. He does not agree with those surgeons who regard it as a formidable method, and holds that the high rate of mortality noted by some operators is the result of neglect of certain technical details. In the first place, the bladder should not be freely exposed and incised, and the surgeon should be content with an opening in the vesical wall just large enough to admit the index finger. The enucleation, which is carried out "in the dark," and simply under control of palpation, should be effected gently, regularly, and methodically, commencing close to the vesical orifice of the urethra, over the culminating point of one of the lobes, and pursued forwards on either side, and afterwards, in a backward direction, at first over the superior half of the adenomatous mass, and finally along the inferior half. The author, who attaches much importance to the effective arrest and control of the bleeding after this operation, is guided in his practice by the method adopted by accoucheurs for arresting haemorrhage and preventing infection, of clearing the uterine cavity of clots and pieces of membrane, and of causing contraction and close apposition of the uterine walls by massage. After the enucleation of the prostate, the vesical cavity is gently washed out with hot water, and after removal of blood clots the walls of the cavity previously occupied by the enlarged gland are compressed between one finger in the bladder and another finger introduced into the rectum. Objections are raised against the use of gauze and of the siphon tube in drainage of the bladder, preference being given to the short and wide tube used by Freyer. This, it is stated, should not project into the vesical cavity for more than 2 centimetres. In cases in which the prognosis of prostatectomy is rendered very unfavourable by extreme debility, by digestive trouble, and by infection of the urinary passages, the author has obtained successful results from the performance of the operation in two stages, the enucleation of the gland being postponed for two or three weeks after the bladder has been opened by suprapubic section.

66. Local Anaesthesia in Major Surgery.

Winfield Scott Schley (*Med. Rec.*, December 19th, 1908) advocates the more extended use of local anaesthesia in surgery. Many cases, he says, can be operated on by this method that would be impossible under general anaesthesia on account of heart, lung, or kidney lesions. Shock is much less by this method, there is absence of gastric and respiratory disturbances, and a much more agreeable post-operative period is obtained. This method must be used in selected cases, the character of the disease, of the patient, and the surroundings being factors that affect the choice. The author has done several abdominal operations successfully under local anaesthesia, of which he gives a detailed account. Gentleness of handling of the tissues is necessary. The patient feels no pain, and is not made nervous by the technique if properly managed. A very small amount of ether may be needed in some cases, for its mental effect chiefly. The peritoneum and intestines are practically devoid of sensitiveness when no inflammatory condition is present. One hour before operation a small dose of morphine is given. Novocain combined with adrenalin is used for injections into the skin along the line of incision. At intervals of ⅓ in. to ½ in. along this line the needle is inserted perpendicularly and injections made. The tissues remain dry and bloodless, and haemorrhage is saved the patient. The operation is begun after fifteen minutes. No bad effects are ever experienced.

OBSTETRICS.

67. Dilatation of the Os in Placenta Praevia.

Hannes (*Mediz. Klinik*, July 12th, 1908) opposes figures of cases observed by him during the last thirteen years to those of Hammerschlag. The latter, who recommends

bringing down a foot, had, in 191 cases, a mortality of 6.3 per cent. mothers and 84 per cent. infants. He mentions that Freund's mortality is given as 10.1 per cent., and Zweifel's as 7.8 per cent. Hannes found that among 119 cases of total placenta praevia, where dilatation of the os was employed, the mortality was only 5 per cent. mothers and 48.8 per cent. infants. He employs dilatation in all cases of total placenta praevia; in lateral placenta praevia (1) when the child lies transversely, (2) in head or breech presentations, when, after rupture of the membranes, haemorrhage does not cease, or pains are weak or absent. The bag is introduced through the placenta by boring through the latter with the finger or some blunt instrument. Thus introduced, filling of the bag does not cause further separation of the placenta, as would probably be the case were the bag introduced between placenta and uterus. Braun's vaginal dilator is used, and must be as big as a child's head when filled, so that when expelled the passages shall be wide enough to permit the passage of the head. It must therefore be capable of holding 600 c.cm. of fluid. Good rhythmical pains are stimulated by the pressure of the bag on the cervical ganglion. Traction should be exerted by a weight corresponding to the amount of fluid injected, but not greater than 600 to 700 grams; the object of this is merely to fix the bag immovably in place. Among out-patients a patent beer bottle, half-filled with water, has proved serviceable. Too forcible traction may cause premature expulsion of the bag in a sausage-shape, due to the formation of a diverticulum or to a cervical tear. Dilatation of the os is an easy operation; the bag can be passed when the os will admit one finger. On expulsion of the bag, delivery can be effected, if necessary, by turning. Of the 6 deaths, 2 were from air embolism after satisfactory delivery, 1 from uncompensated morbus cordis in the puerperium, 1 from anaemia, 1 from cervical tear (in the early days of the use of this method), 1 from pyaemia four weeks after delivery. Puerperal infection occurred in 0.8 per cent., whereas Hammerschlag lost 1.6 per cent. from this cause. This method is the best for the mother, and for the children the results are far better than are obtained with Hammerschlag's method. The danger of fatal pressure on the umbilical cord is equal in both methods, and in boring through the placenta there is a danger of wounding a large fetal vessel. The diminution in the contents of the uterus by bringing down a foot adds to the danger of the child.

68. Removal of Hypertrophied Mammae in Pregnancy.

WISSHAUPT (*Prager med. Woch.*, No. 26, 1908) reports the history of a woman aged 28, who was pregnant and suffering from extreme hypertrophy of the breasts. Three years previously the disease began in the fifth month of her second pregnancy and advanced so quickly that two months later she became too weak to be able to leave her bed. Premature labour was induced, and the breasts diminished considerably in size afterwards. Wisshaupt was consulted by the patient in the fourth month of her next pregnancy. She suffered badly from a recurrence of the hypertrophy. The breasts hung down to the umbilicus; the right measured 29 in. in circumference, the left over 31½ in. Operation was considered advisable, and both breasts were removed; the right weighed 12½ lb., the left, which was amputated eight days later, was over 14¼ lb. in weight. Pregnancy continued after the second operation. The disease of the breast proved, on microscopical examination, to be pure hypertrophy. This appears to be the second instance of operation during pregnancy for the removal of breasts hypertrophied as a complication of that physiological condition. The first operation of the kind (Foges) was reported in 1901.

GYNAECOLOGY.

69. Menstruatio Praecox: Hypernephroma of Ovary.

GAUDIER (*Echo Méd. du Nord*, July 26th, 1908) publishes a report of an operation on a female child aged 4 years where, as in Nacke's case (EPITOME, October 24th, 1908, No. 247), menstruation had been established and other signs of puberty were observed. The child was very hairy, the labia minora protruded beyond the labia majora and were strongly pigmented. The mammae were 4 in. in diameter and the nipples had a distinct areola and area of dilated veins as in pregnancy. For three months there had been free menorrhagia and metrorrhagia between the periods. The abdomen had been enlarging for about four months. A freely movable, smooth tumour of the size of a big orange could be defined; it was successfully removed. Its surface was pearly white, it was solid and seemed to be an adenoma, but on microscopic examination it was found to be made up for the most part of true adrenal tissue. It must have developed from an accessory suprarenal body in the parenchyma of the ovary, which had undergone hypertrophy. Gaudier notes that Marchand described in 1883 the first recorded case of accessory adrenals in the broad ligament, and Marchetti the first known instance of accessory adrenals in the ovary. They are usually detected in youth and tend to undergo atrophy in the adult.

70. Puerperal Abscess communicating with Bladder: Utero-Intestinal Fistula.

LE JEMTEL (*Revue de Gynéc. et de Chir. Abdom.*, July–August, 1908) took charge of a patient suffering from some obscure mischief of puerperal origin, possibly the result of a perforated wound of the uterus caused by the curette. There appeared to be an abscess opening into the intestine and vagina, and in addition faeces passed out of the os uteri, whilst the urine was mixed with pus. The abdomen was opened. A wide rent was found in the posterior wall of the bladder communicating with a cavity full of pus. Le Jemtel did nothing further than to close the rent with a few points of catgut and to drain the bladder through the urethra. He refrained from exploring by dissection the utero-intestinal fistula. At the end of one month the patient was not only cured of her bladder complaint, but also of the fistula, which had closed spontaneously.

THERAPEUTICS.

71. The Treatment of Burns.

PELS-LEUSDEN describes the methods now in use in the Berlin Charité in the treatment of burns (*Deut. med. Woch.*, November 26th, 1908). Before determining on the prognosis of a burn, it is necessary to consider the extent of the surface involved. When more than one-half of the surface of the body has been burned, the patient nearly always dies. Burns involving one-third of the surface may also lead to death. Next, it is necessary to determine the degree of the burns. He emphasizes that burns may appear to be of the first degree, but later show the formation of blisters, or even of scabs. The third point to be taken into consideration is the time which has elapsed between the burning and the examination. The effect of burns on the patient is manifested in general and local symptoms. No general symptoms occur in burns of small extent, but when a considerable area of skin has been involved certain disturbances are seen. The most apparent of these are those of the heart, kidney, and brain. Eykmann has shown that the effect of the heat on the skin produces toxic substances. These substances having been absorbed should be got rid of as soon as their presence is recognized. The cardiac activity is depressed, the pulse becomes rapid and very small, and the vascular tension is lowered. Haemoglobinaemia and haemoglobinuria are seen in many cases, the temperature sinks, and other symptoms indicate an intense toxic action. It is therefore necessary to give digitalis and large quantities of fluids. As the patients are usually thirsty no difficulty is experienced in getting them to swallow strong coffee and tea, with brandy and champagne. Repeated enemata of physiological saline fluid (100 c.cm. in each), or if the blood pressure is sinking intravenous injections of the same, often do good. This, however, should not be carried out in elderly patients until vomiting sets in and delirium or drowsiness threatens. He does not claim that this treatment will save patients for certain, but believes that in a number of cases with doubtful prognosis it acts well. Morphine must be given to allay pain and to quiet the patient, who often suffers severely either from the fear of impending death or from anguish in having been careless. The general symptoms must always be treated first, and it should be remembered that the treatment of the local condition may increase the shock. As a rule the general symptoms pass off in five or six days, but death has been seen after eight or even ten days without sepsis or duodenal ulcer being present. Local treatment of burns of the first degree is unimportant. This, however, is not so in burns of the second or third degree. The object aimed at is to avoid infection of the wound. First the burned area must be thoroughly disinfected. This is extremely painful and cannot be undertaken without some form of anaesthesia. When the burn is not extensive, a local anaesthesia by Hackenbruch's method suffices; in other cases a conduction anaesthesia may be employed, or lumbar anaesthesia should be resorted to. In extensive

burns of the head or of the body a general inhalation anaesthesia is necessary. Ether is better than chloroform. The vesicles or bullae are opened, and the whole surface is well washed with hot water, soap, and a brush for ten minutes. Then alcohol and perchloride of mercury solution is applied for two minutes, and, lastly, the wound is covered with a gauze dressing, with a thick layer of absorbent wool, and another of non-absorbent wool. This method was introduced by Tschmarke. The secretion of the wound is often extremely free, and it then becomes necessary to change the wool from time to time, but not the gauze. The exclusion of air usually relieves the pain. After from ten to fourteen days the whole dressing is spontaneously cast off. The wound is then found to be epidermizing well, and scars resulting from this treatment are usually satisfactory. When the burn is first seen after the lapse of some time, and especially if the surface is not free from infection, Bardeleben's bismuth dressing is to be recommended. Alcohol poultices may be applied when distinct infection has already taken place, and abscesses or phlegmonous inflammations require special treatment. Large denuded surfaces can be cleaned by means of a permanent bath, but care of the heart must be exercised if this is employed. The skin should be well smeared with a fatty ointment to prevent maceration. In the process of healing splints may be required to prevent contractures of joints, and early injections of thiosanimine or fibrolysin will be found useful to obviate contraction of scars in the skin, etc.

72. Osteomalacia Treated by Adrenalin Injections.

REVANDI (*Gazz. degli Osped.*, November 15th, 1908) records a case of osteomalacia successfully treated by adrenalin injections in 1906, cured at the time, and remaining well since, so that she was delivered without difficulty of a living child in July, 1908. The woman was 38 years old, and first began to notice symptoms in her seventh pregnancy (tiredness in the erect posture, difficulty in walking, pains in the pelvic girdle). In her eighth pregnancy her symptoms became so exaggerated at the eighth month that she was admitted into hospital; at that time she was compelled to keep her bed; the clavicles, ribs, and pelvic bones were swollen and tender, and the pelvic measurements reduced from incurving of the bones. Ordinary treatment seemed to do little good, and Caesarean section was contemplated, but Professor Bossi determined first to try the effect of hypodermic injection of Parke Davis 1 in 1,000 adrenalin solution, of which ½ c.cm. was given morning and evening. Almost at once relief from the pains in the bones and the consequent restlessness and insomnia was obtained. The dose was ultimately raised to 2 c.cm., and injections, with occasional short interruptions, were given from December 16th to January 6th, when labour set in. Twins were delivered with the help of forceps, and the puerperium was uneventful (save for a slight mastitis). The patient left the hospital February 27th, cured. Since then she had one miscarriage at two months, and a full-term child born in July of 1908 naturally and without any of the disturbances which had been so marked in the seventh and eighth pregnancies. Experimentally the author has found that with *x* rays one can see a certain degree of osteoporosis in the bones of animals deprived of the suprarenal glands. The interest of the case consists not only in the cure but in the permanent character of the cure. No injections were given after she left the hospital. The author suggests the possibility of similar treatment in rickets.

73. Treatment of Angioma by Congealed Carbon Dioxide.

SAUERBRUCH (*Zentralbl. f. Chir.*, No. 1, 1909) reports very favourably of the results obtained from the treatment of cutaneous angioma by the direct application of congealed carbon dioxide. This method, which was brought under the author's notice by A. I. and E. Oxner of Chicago, will, it is stated, be found a simple and efficient means of dealing with both superficial naevi and also with small cancerous growths of the face. The following description is given of the technique of this treatment: From a cylinder of carbon dioxide, such as is used in making frozen micro-sections, a fairly strong jet of the gas is played on to a piece of cotton-wool; the rapid evaporation of the liquid dioxide causes intense chilling, which condenses a portion of the gas into a snowy powder with a temperature of −70° C. Some of this solidified gas is applied to the surface of the naevus, where it remains from ten to thirty seconds. The intense cold causes extreme contraction of the blood vessels and anaemia of the growth. This is repeated once or twice at the same sitting, the white flakes being applied to different parts of the vascular surface. No dressing is placed over the seat of this operation. The treatment is renewed at intervals of from eight to ten days until the tumour has completely disappeared. In its cosmetic results this method, it is stated, compares favourably with those that are usually practised, and, moreover, is free from pain.

PATHOLOGY.

74. Haemophilia.

ESMEIN (*Arch. des Mal. du Coeur des Vaisseaux et du Sang*, September, 1908) quotes the following case of haemophilia and gives the result of a pathological examination. The patient, 16 years of age, came under observation for recurring and rebellious epistaxis which had led to extreme anaemia. There was no family history of haemophilia; the skin was pale, the mucous membranes blanched, and slight oedema was present about the malleolar regions. The liver and spleen were slightly enlarged, the other organs appearing normal. The blood contained 2,000,000 red cells per cub. mm.; there was a slight polynuclear leucocytosis together with some myelocytes and nucleated red cells. The coagulation time of the blood was retarded, varying from thirty minutes to an hour. There was no local lesion present in the nose or pharynx to explain the epistaxis. Soon after coming under observation profuse nose bleeding, together with bleeding from the gums and petechial haemorrhages into the skin, occurred, and death took place. At the *post-mortem* examination lesions were found in the liver, spleen, bone marrow, and kidneys. The bone marrow was red throughout, and was of such a character as is found after haemorrhage. The spleen was much in the same condition, and its section stuffed with débris of red cells and blood pigment; the liver appeared fatty and was smooth, its general yellowish appearance being marked with small irregular red zones. On microscopical examination a section of the liver showed that normal hepatic tissue was present around the portal spaces only; around the hepatic veins were found large masses of necrosed liver tissue, the hepatic cells here having disappeared, and having been replaced by masses of brown pigment, of blood pigment, and of fat globules. In this débris were seen numerous polynuclear leucocytes. A slight amount of sclerosis was also found. The kidneys were somewhat sclerotic. The author believes that in this case the lesions found in the liver were the cause and not the result of the haemophilia.

75. Tuberculous Infection through the Alimentary Canal.

MAZYCK P. RAVENEL AND JOHN REICHEL (*Proc. of the Path. Soc. of Philadelphia*, 1907), on tuberculous infection through the alimentary canal, report the results of experiments conducted upon 65 guinea-pigs. The problems of the experiments were to determine the ability of tubercle bacilli to pass through the intestinal wall of healthy guinea-pigs, and the time required for them to reach the lungs. The plan of Schlossmann and Engel was in a general way closely followed. Young guinea-pigs were used which had been deprived of food for some hours before they were operated upon. The stomach being raised through an abdominal incision, an emulsion of tubercle bacilli of known virulence was mixed with an equal volume of fresh heavy cream, and injected into the stomach. An extremely fine hypodermic needle was used, and special precautions were taken to prevent infection of the peritoneum on inserting and withdrawing the syringe. Of the 65 guinea-pigs, 10 were used as controls, 10 were killed after four hours, 12 after five hours, 8 after six hours, and the remainder were permitted to live for different periods, the longest being twenty-four hours. The lungs from each guinea-pig were removed, ground in a mortar with physiological salt solution, and injected intraperitoneally into a pair of healthy guinea-pigs. The experiments apparently show that tubercle bacilli passed readily and quickly through the intestinal wall, and reached the lungs in a short time through the thoracic duct. There is doubt as to the accuracy of the method followed; for infection occurred not only through the mucous membrane of the intestine, but also directly through the wound in the stomach caused by the hypodermic needle, and it is possible that in spite of the precautions taken tubercle bacilli were deposited on the edge of the wound when the needle was withdrawn. It appears that inoculations into the alimentary tract should be made without the production of a fresh wound of this tract, in order to obtain results not open to criticism.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

76. Angina Pectoris.

TWO varieties of angina pectoris are usually recognized—the true angina or "angina major," the result of definite anatomical changes, and generally of the nature of arterio-sclerosis, and the false angina or "angina minor," the result of functional disturbance without anatomical substrata. The attack of true angina occurs suddenly but not spontaneously. Josué (*Arch. des Mal. du Coeur des Vaisseaux et du Sang*, October, 1908) says there is always to be found a cause which precipitates an attack, such as fatigue, walking, and especially walking against the wind, digestive processes, straining at stool, mental emotions; fear of an attack may actually precipitate one. With the onset of the attack there occurs pain in the heart and behind the sternum of an extremely painful constricting nature. The pain radiates into the left arm and sometimes into the neck and auricular region, and the region of the cervical plexus. Accompanying the pain there is a terrible mental anguish; the patient is fully conscious of the danger which threatens him, and avoids making the least movement for fear of increasing the duration of the paroxysm. He does not speak nor complain. In some cases the pain is less intense, but the characteristic mental anguish shows itself, as it does in those cases in which pain may be completely absent. During the attack the face is pale, respiratory movements are free and auscultation and percussion shows no disturbance of the respiratory apparatus. The attack lasts from a few seconds to several minutes, when the pain ceases abruptly. In some cases abundant clear urine is passed in the attacks. The attacks may occur only at long intervals, or they may become frequent, several occurring during day or night, or the attacks may indeed become more or less continuous. Death may occur during the first attack or during subsequent attacks; generally sudden, death may occur less quickly through dyspnoea or from a rapidly oncoming oedema of the lung; in other cases the patient dies from a giving out of cardiac power in arterio-sclerosis. Angina minor occurs in hysterical and neurasthenic subjects or in patients suffering from organic nervous diseases, such as tabes. In exophthalmic goitre false angina pectoris sometimes occurs, as it does in tobacco intoxication. The attacks come on generally at night, and are not precipitated by fatigue, efforts, etc., as in true angina, but seemingly spontaneously. The patient complains of a violent burning in the chest, she feels as if her heart were too large for her chest, which appears swollen. The precordial region is markedly hyperaesthetic. The face is cyanosed and often covered with a cold sweat; the patient is agitated and restless, respiration is difficult, and the extremities are cold and cyanotic. The attack does not cease rapidly and abruptly, as in true angina, but lasts for half an hour or longer. Large quantities of urine are passed, and the symptoms gradually pass off. The attack never ends fatally. Between typical cases of true and false angina it is very easy to distinguish, as the author remarks, but there are intermediate cases in which it is difficult if not impossible to do so. With regard to the pathology of angina pectoris, the general idea is that it is the result of an anaemia of the myocardium caused by complete or incomplete obliteration of the coronary arteries. The blood supply to the cardiac muscle through the narrowed coronary arteries is sufficient when the patient is resting, but insufficient for the needs of the cardiac muscle when the patient exerts himself. The upholders of this hypothesis as to the coronary artery obstruction being the cause of angina think that attacks of false angina are the result of a simple spasm of the nutrient vessels of the heart. The coronary artery theory of angina is, however, not borne out by anatomical and physiological facts. Cases have been published in which typical attacks of true angina have occurred, and in which cases at autopsy neither obliteration nor stenosis of the arteries of the heart have been found. Also obstruction or narrowing of the coronary arteries has been found *post mortem* in persons who have never suffered from attacks of angina. After ligature of one of the coronary arteries in an animal it is found that the cardiac muscle supplied by the ligated vessel ceases to contract, and complete arrest of the heart follows ligature of both coronary arteries. These results are quite different to what occurs in angina pectoris, in which the heart continues to beat normally. Another view is that true angina pectoris is the result of a neuritis of the cardiac plexus of nerves, which in its turn is the result of aortic lesions (Lancereaux, Peter). This theory explains readily the radiations of the pain, but does not explain how it is that the attacks are precipitated by certain occasional factors, nor why it is that the attack ceases as soon as the patient remains at rest. Merklen thinks that a subacute distension of the heart plays a rôle in the attacks of angina pectoris, and, whilst admitting that this factor may possibly have a share in bringing about the pain in certain cases, in others it can have no influence. According to Roudot, and Gilbert and Garnier renal insufficiency is the real cause of anginal attacks. With regard to the state of the arterial tension in cases of angina, Déja-Dunin found that in cases of arterio-sclerosis, attacks of angina occurred in 46 per cent. of cases with an arterial tension lower than normal, and in 18 per cent. of cases in which there was increased arterial tension. He further found that there was no difference in the symptoms and prognosis between the two classes of cases. On the other hand, Pal and Rist and Krantz have noticed that even if the arterial pressure be normal or subnormal between the attacks of angina, the pressure rises the moment the attack occurs, and Pal considers angina as a form of vaso-constrictor crisis. Vaquez says that abrupt distension of the aorta, which is already diseased, sufficient to cause an accidental increase of pressure, is the cause of anginal attacks. In the author's opinion anginal pain is the pain of a diseased aorta, and he likens the pain to that occurring from intestinal, hepatic, and nephritic colic where disturbances in the intestine, liver, or kidney exist. In the case of aortic pain, however, the patient unconsciously recognizes the grave danger of disease of so important a vessel. These painful attacks occur when the disease is localized to the first part of the ascending aorta near its origin. The influence of movement, emotion, etc., in precipitating an attack of angina is seen when one remembers that these factors cause a rise of arterial pressure, the aorta becomes more distended, and pain then occurs. This theory explains how it is that angina occurs so readily in patients with a high arterial pressure such as is found in renal insufficiency.

77. Hysterical Fever.

MÖRCHEN (*Berl. klin. Woch.*) states that undoubtedly rise of temperature to the highest degree possible occurs for which no explanation can be found in any diseased organ. Mixed forms also occur where an existing organic fever rises considerably owing to the intervention of nervous causes. Presumably the rise of temperature is of vasomotor origin. The cases described are met with in individuals with marked vasomotor neuroses, especially hysteria. This nervous fever is further distinguished from one of organic origin by the irregular type of fever, its origin and disappearance in connexion with psychico-nervous occurrences, the very slight disturbance of the general well-being even with the highest degree of fever, the hardly altered condition of the pulse, nutrition, breathing, etc., the failure of antipyretics and the positive action of baths and suggestive treatment. Differential diagnosis: Phthisis, typhoid, meningitis, influenza. A false diagnosis of phthisis is most often made; it is extraordinary how often one finds a history of lung trouble of which later no further mention occurs; some authors speak of pseudo-phthisis. In one case osteo-myelitis was thought of.

SURGERY.

78. Gland Puncture in the Diagnosis of Syphilis.

PREIS (*Pester Med.-Chir. Presse*, November 8th and 15th, 1908) has been able to demonstrate the *Spirochaeta pallida* in nearly 100 per cent. of cases of syphilis in the secondary latent stage. In all of 60 doubtful cases, which gave a positive result, clinical evidence of syphilis appeared later. The technique is so simple that every practitioner can undertake it, and it is thus no longer permissible to allow a diagnosis to remain in doubt, or to wait for the appearance of secondary symptoms. Gland puncture should be used in all cases where, for any reason, examination of the ulcer serum proves negative. This is likely to be the

case if the ulcer is partially or completely resolved, if it has been treated with caustics, or if it is disintegrating. The author has never failed to find the *pallida* during the period between the first typical hardening of the glands and the first eruption (six to ten weeks). A small syringe, such as is used for injections, is employed; the skin over the gland is shaved, cleansed, rubbed energetically with ether, and then drawn away from the gland as far as possible, so that on withdrawing the needle no superfluous exudation from the loose tissues shall enter. The needle is plunged as obliquely as possible in the long axis of the gland, and its point is moved about, so as to obtain exudation from various parts. Aspiration should be vigorous. The liquid obtained is then syringed out at once on to a glass slide, and smeared along this by the edge of a second slide. This should be done as speedily as possible. No attempt to fix should be made, but a solution of 20 to 25 drops of Giemsa's solution in 15 c.cm. of distilled water should be at once poured liberally on to the slide. The slide is then warmed over a Bunsen or spirit flame until steam begins to rise, when the solution is poured off. This process is repeated till the stain has all been used, and the whole procedure should be as rapid as possible. The slide is then washed under the tap and dried with blotting paper. The preparation should now be examined under a low power in order to see if the red blood corpuscles are well stained. If this is the case (and if otherwise staining should be repeated), a part where the red blood corpuscles show well should be chosen, and this part examined with the immersion lens. No spirochaetes have as yet been found in syphilitic glands except the *pallida;* and the author has examined the glands in cases of carcinoma of the buccal mucous membrane and of gangrenous ulcer and found no single spirochaete. Preis gives notes of 3 doubtful cases in which gland puncture cleared up the diagnosis. This method is superior to Wassermann's reaction, in which only 56 per cent. of the cases in the secondary latent stage give a positive reaction, which is also complicated, and in which mistakes may occur on the positive side—a result never seen in gland puncture. Wassermann's reaction should only be used when spirochaetal examination for any reason is inadvisable.

79. Mechanical Treatment of Paralysis of the Shoulder.

David Silver (*Amer. Journ. of Orthop. Surg.*, November, 1908) says the disability in paralysis of the shoulder is the result of direct sinking of the head away from the socket, insecurity of the head, and contraction of unaffected muscles. That damaged nerve cells may recover sufficiently to functionate, but in the meantime the muscles be incapacitated by overstretching and atrophy from disease, is well known. If these evils have not been avoided by timely measures, it is still possible at a later stage to do some good by maintaining the paralysed muscles in a position of maximum relaxation, and thus permitting retraction to take place. In the application of this principle of treatment to the shoulder the author makes use of a modification of Monk's wire splint, putting up the arm with hand supinated, elbow flexed, and palm resting upon the top of the head. Three cases are reported in which the method was followed by good results. Since the method is a conservative one, its use is recommended in all cases not known to be completely paralysed. While in some cases the paralysis is so extensive that the remaining power will be insufficient, even when developed to the highest degree of efficiency, to maintain contact between the head of the humerus and the glenoid, in others it may be sufficient to maintain contact and no more, yet there are still others with a greater degree of recovery of the nerve lesion, in which a varying amount of active abduction will be secured. The use of the method is also recommended as a preliminary measure to muscle grafting.

80. The Treatment of Ruptured Kidney.

Morestin (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 36, 1908), in a report on a case communicated by Fredet, in which extensive laceration of the left kidney causing abundant haemorrhage was successfully treated by suture of the injured organ, discusses the indications for direct surgical intervention in similar instances. While acknowledging that in most instances renal contusion may be cured by rest and simple means of treatment, the author of this report holds that when there is free and persistent bleeding with a large perirenal haematoma, and the condition of the patient is such as to excite much anxiety, the surgeon should not hesitate by the simple and harmless procedure of a lumbar incision to expose the injured kidney with the views of dissipating doubt, of arresting the flow of blood, and of protecting the patient against remote complications. Nephrectomy, which, it has been stated, is practised too frequently and without just cause in cases of renal injury, should, it is argued, be reserved for those extreme forms of traumatism in which the kidney has been either completely crushed or torn away from its hilum. In most cases, Morestin asserts, the condition of the ruptured kidney will permit a conservative operation. Suture of the lacerated kidney is possible, and, indeed, a relatively simple measure. It may enable the surgeon to re-establish the shape of the organ, and will suffice to arrest bleeding. It is pointed out, however, that the application of sutures to a lacerated kidney will not prevent but rather favour the formation, between the apposed surfaces of torn renal tissue, of cicatricial septa which will tend to keep the fragments anatomically distinct. Moreover, the tension of the sutures may modify the functional value of the preserved organ. For these reasons the use of the suture would be indicated, the author thinks, only in those cases in which the laceration is not extensive. If the kidney be much torn, but still in a condition favouring conservatism, it might be well, it is suggested, to arrest the bleeding and to treat the injury by simple packing. It remains uncertain whether the conservative treatment of ruptured kidney which is so satisfactory and free from danger in its immediate results, is likely or not to lead in course of time to any serious disturbance of the function of the retained organ.

OBSTETRICS.

81. Artificial Interruption of Pregnancy.

In developing the thesis that the practitioner is justified in inducing premature labour under certain conditions, H. Fritsch (*Deut. med. Woch.*, November 19th, 1908) points out that no definite indications for this procedure can be set up, but that each case must be judged on its own merits. He regards it as a gross error to say that pregnancy should be interrupted in hyperemesis gravidarum, and just as great an error to say that it should not be interrupted. The objection to killing a fetus or to inducing labour before the fetus is viable is usually that the practitioner has no more right to sacrifice a life than any other man has. To this he replies that it is certainly criminal to sacrifice the life of the mother when she could be saved by the removal of the fetus, while if the pregnancy is undisturbed both mother and fetus will die. The skill of the practitioner is required to determine when this applies. He cites a case in Bavaria in which a medical man was found guilty of manslaughter by negligence in not performing laparotomy after rupture of the uterus and escape of the child into the peritoneal cavity. Neglect to do the right thing in obstetrics is just as culpable as doing the wrong thing. It is frequently stated that pregnancy may not be interrupted until all other means have been tried and have failed. Fritsch considers that this may lead to difficulties, inasmuch as "all other means" is a very wide expression. He prefers to lay it down as an axiom that pregnancy should not be interrupted until the patient has been carefully observed for a reasonable time in a hospital. He maintains that observation in the patient's house is incompatible with the proper trial of less radical measures. Two diseases are mentioned which may form indications for the interruption of pregnancy. These are hyperemesis and tuberculosis. He has been consulted five times during forty years in cases of hyperemesis, in which the only reasonable advice was to let the patient die as comfortably as possible. The lives might have been saved at an earlier stage by induced abortion, but it was too late. With regard to tuberculosis, it is necessary to recognize that some cases run a very rapid course and death ensues within a few weeks, while others are essentially chronic. Between these two extremes there are innumerable transitions. A careful selection of the cases is therefore necessary, and only experience can teach which cases will do well if the pregnancy is left undisturbed under otherwise favourable conditions, and which will do well only after abortion is performed. The only solid objection to artificial interruption of pregnancy in selected cases is the one that the mental effect on the patient, the pain, the loss of blood, and the subsequent febrile disturbances do more harm than the removal of the fetus does good. Fritsch admits that all this will detract from the usefulness of the procedure if the technique is bad. He points out that nearly all authors who write on this subject describe a different technique. He therefore

goes into some detail in respect to the technique which he has employed, and which has yielded him excellent results. He warns the obstetrician against rapid clearing of the uterus. It is very tempting to get the business over as quickly as possible, but it is very fatal to put this into practice. First, the patient is admitted into hospital. The advantages of this are: First, that the notes on the history of the case and the presence of a number of trained persons guarantee that the induction of premature labour is not criminal; in the second place, the observation in hospital permits of a better determination of the proper time when the pregnancy should be interrupted than in private houses. The bowels are opened, a "sitz" bath of lysol solution is given, and the patient is put to bed. During the course of twenty-four hours the vagina is irrigated three times with 2 litres of lysol solution, and the external parts are well disinfected. A suitable laminaria tent is then introduced into the cervix. The vagina is loosely packed with iodoform gauze. The external parts are covered with wet disinfectant dressings, which must be renewed after each soiling, and also from time to time. After twenty-four hours the patient is placed on her side, the tent is removed, and the vagina is irrigated. The membranes are then pierced by a uterine catheter, and the amniotic fluid is allowed to escape through the catheter. Long strips of iodoform gauze which have been dipped into ichthyol glycerine are then introduced into the uterus and amniotic cavity. In multiparae the whole ovum is often expelled rapidly after this without marked pain. As the fetus dies the decidua becomes spontaneously detached and the glycerine also calls forth contractions. After the whole ovum is expelled the vagina and uterus are irrigated and the patient is put back to bed. After about twenty-four hours no more blood comes away, and as a rule the patient can get up and leave the hospital on the second or third day. In some cases the uterus does not contract and fever sets in. This is not a sign of infection, but arises in all cases in which the fetus dies *in utero*. As soon as the membranes, etc., are detached the whole ovum can be removed by means of a curette or of ovum forceps. In this way the author obtains good results, never experiences haemorrhage, and always places his patients in the best possible position for a complete recovery.

GYNAECOLOGY.

82. Treatment of Cancer of the Genital Organs in Woman.

FAURE (*Internat. Soc. of Surgery*, 1908) states that the removal of cancers of the vulva should always be accompanied by removal of the inguinal glands. If the vulvar carcinoma be situated medially the glands in both groins should be removed, and even when the vulvar growth appears to be limited to one or other side he thinks it is wise to remove the inguinal glands on each side. In cancer of ovary or Fallopian tube, both tube and ovary should be removed. With regard to cancer of the uterine body, the author thinks hysterectomy by the abdominal route far preferable to that by the vaginal route, as the former allows of complete removal of the diseased organ without laceration or tearing of it, as is inevitable when the vaginal method is adopted. In feeble patients, however, and in very fat patients, he thinks it is better to carry out subtotal hysterectomy and to leave the neck, provided that a sufficiently wide margin of healthy tissue can be removed outside the limits of the growth. In the case of cancer of the vagina the author discusses the treatment under two headings: First, cancer of the lower part, and secondly, cancer of the upper part. Cancer of the lower third of the vagina should be treated like vulvar cancer, whilst cancer of the upper two-thirds of the vagina should be treated like cancer of the uterine cervix. In cancer of the upper part of the vagina, removal by the vaginal route is, in the author's opinion, a very uncertain and insufficient method, and the abdominal route he considers the only satisfactory way. It is necessary to remove both the uterus and the upper part of the vagina, and the operation should be carried out just like an abdominal hysterectomy for cancer of the cervix. By the abdominal route one can separate the diseased vagina from the rectum, bladder and ureters, and the hypogastric arteries can be ligatured. Before commencing the abdominal operation, the wall of the vagina should be cut through in a circular way about 2 cm. below the lowest limit of the growth. Such an operation, although fraught with considerable immediate danger, will, the author thinks, give far better results than vaginal operations, which almost always end in recurrence and death. With regard to cancer of the cervix, there is no doubt in the author's mind that abdominal hysterectomy is far superior to hysterectomy by the vaginal route. The abdominal operation has rendered possible a hysterectomy on a far larger number of cases than was possible when vaginal hysterectomy was employed, the statistics of Rosthorn, Doderlein, Schauta and Chrobak, Wertheim, etc., showing this. By the abdominal method one can remove the diseased parts far more surely and carefully than by the vaginal route, and the ureters especially can by the former method be carefully dissected; this is not feasible at the vaginal operation. Another disadvantage of the vaginal operation is that infected lymphatic glands are liable to be missed. Even in cases in which the extent of disease is limited, the author is of the opinion that the abdominal operation is still to be preferred, as, under these circumstances, the gravity of the operation does not exceed that of vaginal hysterectomy, and it allows of a far more complete inspection and examination of the extent of disease than does the latter. Vagino-perineal colpo-hysterectomy, as performed by Schuchard and Schauta, has given very good results, from 40 to 50 per cent. of their cases being cured; but, in the author's opinion, this operation, although superior to vaginal hysterectomy, has some of the same disadvantages; by this method the ureter cannot be freed from growth with the same ease and safety as in the abdominal operation, nor can the lymphatic glands be had access to. He considers this operation justifiable only in cases of well circumscribed disease; and, as the case mortality for this operation is the same as that for abdominal hysterectomy, for this and for the reasons given above he prefers the latter operation. Abdominal hysterectomy is in simple cases an easy operation; it affords the surgeon infinite resources in exploring the pelvis which no other operation does, and its only drawback is its gravity. But, as the author remarks, in treating such a mortal disease as cancer of the cervix, the operation which gives the best prospect of lasting cure should be carried out in spite of its gravity. In carrying out abdominal hysterectomy by the method of Wertheim the author nearly always ligatures the hypogastric arteries, as by this means excessive loss of blood is prevented and a more minute examination of the diseased parts can be carried out. To check bleeding from small vessels in the depth of the pelvis the author employs metallic ligatures, using Michel's forceps for this purpose. He is convinced that it is advisable to remove all lymphatic glands which can be felt easily, and especially those situated on each side of the pelvic wall near the bifurcation of the iliac arteries. Further than this he does not go, as to remove all the glands and cellular tissue of the pelvis is an impossible operation. With regard to the removal of the lumbar glands, the author thinks that if the lumbar glands are infected there are probably many others also involved, and that it is folly to think that one can remove all such glands. Large and extensive operations for the removal of all possibly infected glands renders the gravity of the operation much more severe, and may be the means of infecting the large cellular spaces and lead to septicaemia. For these reasons the author advises that only those glands which appear to be infected should be removed, these glands being those situated on the lateral aspects of the pelvis about the bifurcation of the iliac arteries. Vagino-abdominal hysterectomy the author has carried out thirteen times. The vaginal wall is incised circularly at a suitable height, the wall is separated from the bladder and rectum, and its edge sutured over the cervix, enclosing this. This being done, abdominal hysterectomy is carried out in the usual way. This preliminary separation of the vaginal wall allows the uterus to be well raised up from the pelvis during the abdominal operation, and the parts around the cervix can then be dissected with great ease. This preliminary vaginal section has also the advantage that by it the operator can easily know at what level he is to stop when dissecting in the pelvis. In conclusion, the author states that in simple cases with limited ulceration and a perfectly movable uterus the simplest and the best operation is pure abdominal hysterectomy; in more complicated cases and when the uterus is not freely movable, it is better, both for the safety of the patient and for the facility of operating, to have recourse to vagino-abdominal hysterectomy.

THERAPEUTICS.

83. Treatment of Carbuncle.

THE treatment of large carbuncles is, according to Max Grasmann (*Deut. med. Woch.*, October 15th, 1908), one of the most difficult problems which the general practitioner

has to meet. A simple incision of an inch or so in length cannot serve any useful purpose when the pustule extends from the middle of the occiput to the upper dorsal vertebrae and from the one sterno-cleido-mastoideus to the other. Poultices also are not sufficient for such a lesion. The most certain method is excision. Riedel first described a satisfactory method of carrying this out. The operation must be so planned that all the dangerous area is removed, that the general health does not suffer from the interference, that not too much healthy tissue be sacrificed, and that while the process of healing is rapid, the scar resulting becomes a smooth one. Various methods have been suggested, but the author considers that the one which he uses can be recommended. He makes a deep crucial incision over the carbuncle. The skin flaps thus made are dissected from the muscular fascia and packed underneath with gauze. Hot boro-salicylic acid solution applied on gauze is used for stopping bleeding and for plugging. The surrounding skin can be protected from burning by smearing with fat. The necrotic tissue is then removed partly with scissors and partly with forceps. A sharp spoon should not be used. When all the inflamed and necrotic tissue has been got rid of, a fresh hot boro-salicylic plug is applied and a large wet dressing covers the whole wound. The greater part of the necrotic tissue is cast off within a week of the operation and healthy granulations appear in the wound. The skin flaps are then brought into position by a few sutures, and the wound is rendered as small as possible. The only points in the treatment on which he lays emphasis are free and early incision from healthy tissue to healthy tissue across the carbuncle, free exposure of the necrotic tissue after the flaps have been protected, and plugging with hot boro-salicylic acid solutions. He has obtained excellent results in his cases with this method.

84. Intravenous Injections of Sublimate in Typhoid Fever.

Crispolti (*Rif. Med.*, December 14th, 1908) reports two severe cases of typhoid where extraordinarily good effects were induced by intravenous injections of sublimate. In each case a marked feature was the high temperature and grave toxaemia. The treatment was inaugurated on the twelfth and thirteenth day of the disease respectively. In one case the temperature dropped after the first injection, in seven hours, from 40.3° C. to 37.2°, and after a temporary rise the next day to 37.9°; after a second injection it fell to normal and remained so to the end. In the other case an equally satisfactory result was obtained, but owing to two secondary and temporary rises of temperature three injections were necessary. Both cases recovered completely. With the fall of temperature there was a corresponding rise of blood pressure and improvement in the toxic symptoms. The dose was 1 centigram, and the author strongly advises that not less than this should be given; he has given 2 centigrams in some cases of syphilis. The effects were certainly highly beneficial in these cases and showed themselves chiefly in the reduction of the temperature, in the lowering of the rapidity of the pulse and respiration, in the rise of blood pressure and the lessened toxaemia. Probably these results were brought about by stimulating the greater and more active production of antitoxin substances.

85. Bromglidin.

H. Boruttau (*Deut. med. Woch.*, October 29th, 1908) states that while organic bromine compounds have been recommended in therapeutics, little has been made out with regard to the method of excretion or retention of the bromine. It is apparent from what has been written on this matter that bromine, when given in the form of the alkaline bromides, behaves differently to the way in which iodine in the form of alkaline iodides behaves. Iodine is not stored up in the organism, even when given in large doses. Bromine, on the other hand, is very slowly excreted, and to a considerable extent is retained. It has been found that chlorine is excreted in excess during medication with bromides, so that it has been assumed that the bromine replaces chlorine in the organism. Bromglidin contains 10 per cent. bromine. It is put up in ½ gram tablets. Boruttau studied the excretion of bromine when taken under varying conditions. After taking six tablets daily for four days—that is, 1.2 grams of bromine—he found that the urine contained the following quantities of bromine on the respective days: 0.171, 0.202, 0.217, 0.189, 0.099, and 0.017 grams, while traces were found up to the tenth day. Testing the conditions on animals, he found that rabbits behaved in a similar manner. Other experiments confirmed the find that the bromine of bromglidin is excreted, like the bromine of the alkaline bromides, extremely slowly, but that the initial excretion—that is, the excretion during the first twenty-four hours—is higher than in the case of the bromide. He further found that the same physiological action was obtained by smaller quantities of bromine in bromglidin than in alkaline bromides.

86. Fulguration in Cancer.

K. Schultze, writing from Bier's surgical clinic in Berlin, reports on the trials which they have made of the fulguration treatment of cancer, and comes reluctantly to the conclusion that its value is *nil* (*Deut. med. Woch.*, October 6th, 1908). Four cases of inoperable mammary carcinoma were selected for the treatment. At first a beneficial influence was seen in the carcinomata. The pain and discharge from the ulcerating surfaces lessened, and the general condition improved in some of the cases. It is, therefore, as good a palliative means as are Roentgen and radium rays and cautery. He gives short summaries of the four cases, from which it appears that one of the patients had already died after an apparent improvement lasting for eleven days; the second patient improved locally under the treatment, but a spread of the growth soon made itself visible and palpable; the third patient improved after the operation and fulguration, but after a time fresh growth took place, and the general condition became markedly worse; while the fourth patient also appeared to have been improved by removal of the greater part of the tumour and fulguration of the unremovable portions, but after a short time fresh nodules appeared, and the disease seemed to progress with undiminished energy. In spite of the good results claimed by some surgeons from this method, Schultze is forced to state that fulguration in his hands has been a complete failure.

PATHOLOGY.

87. Serum Reaction of Syphilis.

During recent times the clinical value of the Wassermann-Neisser-Bruck reaction in syphilis has been shown to be considerable, and it was therefore of importance when Much and Eichelberg reported early in 1908 that in a series of scarlatina patients, to which they had applied the reaction, complement was deflected in 40 per cent. These authors considered themselves justified in warning clinicians against attaching too great importance on a positive reaction. Bruck and L. Cohn (*Berl. klin. Woch.*, December 21st, 1908) considered that the clinical value of the reaction would only be lessened by this find, if confirmed, if it could be shown that the scarlatinal reaction persisted after convalescence. Several observers tested the serum of non-syphilitic children during an attack of scarlet fever and obtained negative results. While the authors do not question the correctness of Much and Eichelberg's results, they came to the conclusion that a positive reaction in scarlatina is not the rule but an exception, which is produced by some altered conditions, the nature of which is still unknown. Seligmann and Klopstock accidentally came across an interesting find. They obtained negative results in 13 scarlatina cases. After a longish interval they used the same extract and obtained positive reactions not only with scarlatinal serums but also with the serum of persons who were not suffering from scarlatina or syphilis. The antigen had obviously undergone some change. Others found that different antigens were capable of yielding positive reactions in scarlatina and syphilis. This would suggest that the reaction in scarlet fever is not identical with that in syphilis. In repeating the experiments with various antigens, the authors found that while all the antigens which they used gave uniform positive reactions with syphilitic serum, some scarlatinal serums gave positive reactions with one antigen and negative reactions with the others. It is therefore not correct to state that the syphilis reaction occurs in scarlatina, since it has been shown that the substance giving rise to complement deflection in scarlatinal serum is not identical with that giving rise to the reaction in syphilitic serum. They therefore claim that the clinical value of the syphilis reaction is not lessened by the find that scarlatinal serums may react positively with one antigen but not with others. Much himself has more recently admitted that this is so.

88. Phlyctenules after Calmette's Reaction

Stargardt (*XXXV Versammlung d.-Ophth-Gesell., Heidelberg*, August, 1908) finds that the phlyctenules which so often follow the use of Calmette's serum have the same characteristics as the ordinary phlyctenules described by Leber. Giant cells are present, but no caseation. Tubercle bacilli are not found.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

89. Grocco's Triangle.

GROCCO described this as an area of relative dullness taking the form of a right-angled triangle, to be found on the opposite side of the back to that on which a pleural effusion is present. Its inner limit corresponds to the line of spinal processes, its base to the lower limit of the thoracic resonance, and its outer limit is represented by a line drawn from the base rising obliquely to join the vertebral column in the neighbourhood of the upper limit of the pleural effusion. Grocco states also that the dullness increases as one approaches the base or the vertebral spines, and it is modified by the position assumed by the patient, diminishing when he lies on the side with the effusion. It is more definite when a right pleural effusion is present, and the sign is stated to be of great value in diagnosing between pleurisy and pneumonia. Roch and Dufour (*La Semaine Médicale*, October 21st, 1908) find that, according to many Italian observers, Grocco's triangle is always to be found in cases of pleural effusion, and that it is of real diagnostic value. In Germany, Rauchfuss is a very strong advocate of the value of Grocco's sign. He has found it to be present in 77 cases of pleurisy in children, and in every case in which a free effusion reached the level of the eighth dorsal vertebra. He does not find, however, that the sign varies according to the position of the patient. At Escherich's clinic Hamburger has frequently found in children a zone of paravertebral dullness on the side opposite to a pleural effusion, which, however, he has found to take the form of a longitudinal band rather than that of a triangle; this sign he finds, however, occurs in all conditions in which there occurs a hepatization or extensive infiltration of the lung, and he does not think it of diagnostic importance. Pollak draws similar conclusions. In France Cassaët is convinced of the value of this sign, and according to him it occurs in all large pleural effusions, and that when found it is sufficient evidence for the diagnosis of an effusion. Darier and Bernard hold much less positive views. In England and America, Ewart, Thayer, etc., conclude that the sign of Grocco is of considerable value in the diagnosis of pleurisies. The paravertebral triangle of dullness has, however, been found in cases of disease beneath the diaphragm; thus Ewart found it in a case of pyuria with lumbar abscess, Beall in sulphuric abscess, and Smythies found it in a woman suffering with an ovarian tumour. When one seeks for an explanation as to the cause of Grocco's sign, the opinions of different investigators are at still more variance. Some think that the fluid arrests the vibrations on the spine and side, and hence a diminution of resonance occurs on the side opposite to the effusion; for this view there is no evidence. Others think the mediastinum is pushed over to the healthy side by the effusion, thus causing compression of the healthy lung. Others think that the posterior pleural cul-de-sac distended with fluid passes across the middle line, pushing before it the posterior mediastinal contents and encroaching on the healthy side. The marked prominence of the vertebral bodies renders the two latter theories extremely unlikely explanations. The experience of the authors of this paper is as follows: They have found the paravertebral dullness present in some cases of pleural effusion; this area of dullness was, however, more in the form of a longitudinal band than in the form of the triangle as described by Grocco. They found that this band did not alter appreciably according to the position assumed by the patient. They found it present in cases of pneumonia and after evacuation of a pleural effusion by aspiration. Further, they have convinced themselves that in healthy adults there is present on each side an area of relative dullness corresponding to the lower and inner borders of the lungs. These two areas of dullness come together at the line of vertebral spines and at the level of the fourth and fifth dorsal vertebrae form a band 6 to 7 cm. in breadth; this band of dullness, traced downwards, enlarges until it merges into the lumbar dullness at the level of the tenth dorsal vertebra; it measures approximately 12 cm. across. This dullness, the authors consider, is due to the presence of the vertebral column and the large muscles which fill up the costo-vertebral gutters and which, increasing in thickness as they do from above downwards, give rise to that gradual impairment of percussion note as one proceeds from above downwards in these regions. In none of the cases of pleural effusion investigated by the authors have they found the extent or the degree of this paravertebral dullness to be greater than in persons free from effusion. The conclusions drawn by the authors are that in the adult the triangle of paravertebral dullness is not pathognomonic of pleurisy, and it is of no help in the diagnosis of lung affections from pleurisy.

90. Tricuspid Regurgitation.

THE correct diagnosis of insufficiency of the tricuspid valve is extremely difficult, and our knowledge of the attending conditions is limited. The textbooks give but little information on the subject, and it has to be admitted that comparatively little important work has been carried out in connexion with it. D. von Tabora (*Deut. med. Woch.*, November 26th, 1908) deals with this subject and presents some useful information. As compared with endocardial affections of the valve, the functional or relative disease of the valve is very common. The latter is produced by a dilatation of the right ventricle. It is, however, not possible to diagnose *intra vitam* between organic and functional tricuspid regurgitation. It is stated that the symptoms of tricuspid regurgitation are those of extreme insufficiency of the heart. The author cannot accept this, although he realizes that since functional disease of the tricuspid orifice is a sign of loss of compensation in cases of mitral disease, the circulation, taken as a whole, is disturbed. The possibility of tricuspid regurgitation being the first sign of cardiac weakness has not been recognized until quite recently. In examining a series of cases of anaemias of various origins no auricular venous pulse could be recorded. However, he recites the history of a case in which tricuspid insufficiency followed primary weakening of the right ventricle. The curve of the jugular vein showed a ventricular pulse, while the arrhythmia was seen to correspond to what is known as *pulsus irregularis perpetuus*. The symptoms usually ascribed to tricuspid regurgitation are: extension of the cardiac dullness to the right, pulsation to the right of the sternum, systolic murmur, soft second pulmonary sound, systolic venous and liver pulse, severe signs of failure of the heart (ascites, oedema, etc.). On examining his cases he found that while the extension of the cardiac dullness to the right was present in all cases, it was not extreme in more than half the total number. Pulsation to the right of the sternum is rare, and is only met with in extreme cases. In none of his cases could he definitely localize a systolic murmur to the tricuspid orifice. As a rule, when such was present, it was quite as intense or more so at the apex or at the pulmonary orifice. In a considerable number of cases of undoubted tricuspid regurgitation he did not hear any systolic murmur at all. The same experience was made with regard to the supposed softening of the second sound at the pulmonary area. He does not believe that it has anything to do with tricuspid regurgitation, and maintains that the majority of cases do not show this sign. The only symptom which remains over is the systolic venous and liver pulse. This is called positive or ventricular, and corresponds to the contraction of the ventricle in point of time. Inspection and palpation are not capable of determining such a pulsation. A suggestion has been made that if the jugular vein be compressed digitally and observation be made whether the central portion of the vein fills again or not, regurgitation of the tricuspid valve might be diagnosed. Von Tabora, however, considers that this is extremely unreliable. In many cases the venous pulse is not visible, and it is therefore essential to record it graphically. He discusses the various points in connexion with the type of curve obtained from cases of this kind, and appends some illustrative curves. Marked tricuspid regurgitation, even if of functional origin, rarely clears up completely. It is, however, possible for the symptoms to disappear, and the patients may then pass months or years without any subjective signs pointing to heart disease. In a few isolated cases von Tabora believes that tricuspid regurgitation occurs as the first sign of cardiac failure, but this must be regarded as being very rare.

SURGERY.

91. Treatment of Perityphlitis.

KLAUBER (*Med. Klin.*, July 12th, 1908) advises immediate, and, wherever possible, radical operation in every stage of appendicitis. He claims that by this means he has reduced the mortality of the cases in his hands from 39 per cent. in 1905 to 12 per cent. in 1905, and 8 per cent. in 1907. During 1902 to 1905 he employed the expectant treatment, with the following results. All those tabulated are late cases—that is, operated upon over forty-eight hours after the commencement of the illness.

Abscess incision	26	Two deaths from fistula and pleurisy respectively.
Extraperitoneal appendectomy	13	No deaths.
Laparotomies	21	Twelve deaths = 57 per cent.
Total...	60	Fourteen deaths = 23.3 per cent.

From August, 1905, to March, 1908, all late cases were operated upon at once, no case being refused operation, with the following results:

Abscess incision	11	No deaths.
Laparotomies	40	Two deaths = 5 per cent.
Total...	51	Two deaths = 3.9 per cent.

Klauber bases his opinion upon the following considerations: The clinical division into early, intermediate, and late stages was found in numberless cases not to correspond to actual anatomical conditions. It is never possible to tell at the commencement of a case whether it will run a mild or severe course. The mortality of cases operated upon in early and late stages is not comparable, because in the latter a waiting policy has been employed, and operation has been undertaken either experitoneally after an abscess has formed, when results have been excellent; or intraperitoneally after peritonitis has occurred, when the mortality has been 50 to 60 per cent. It is to avoid this mortality that Klauber advises early operation in all cases. Those cases which would otherwise be opened extraperitoneally are not endangered by early operation, as is shown by Klauber's two deaths. The one died from an abscess of the liver present at the time of the operation, the other from intestinal paralysis existent four days before operation, while at the autopsy the peritoneal purulent exudation was found to have disappeared. On the other hand, a waiting policy may lead to disastrous results. A perityphlitic movable tumour may be felt in the abdomen, causing no severe general symptoms, but at the operation a mass of omentum containing the gangrenous appendix and a sanious abscess may be found, the whole mass freely movable. Expectant treatment of such a case would lead to intraperitoneal bursting of the abscess and general peritonitis; or a second abscess may be found in the pelvis as well as the perityphlitic abscess, well marked off, and with healthy surroundings. The appendix is always removed, because the author finds that only in this way can the various burrowing abscesses be drained, and its removal means also the removal of the source of infection. This has not been found difficult. The pelvis should always be examined, even in cases of apparently well-circumscribed abscesses, as collections of fluid may be found here, and a drain inserted towards the pelvis may guide, on the second or third day, the exit of a quantity of pus. A large collection of exudation in the left half of the abdomen necessitates a counter opening on the left side and drainage. Klauber disapproves of irrigating the abdomen, because (1) in bad cases it is useless; (2) favourable cases do as well without; and (3) in certain other cases—for example, perforation—it was found to cause multiple abscesses, whereas in similar cases, where irrigation was not employed, these did not occur. Nature's method of irrigation is assisted by the administration of fluid per mouth and rectum. Every hollow of the abdomen where fluid exudate collects should be drained. The author's unfavourable results are ascribed to virulence of infection or to intestinal paralysis which occurred mostly after previous opium treatment. In none of the author's last 56 cases was it necessary to perform a further operation in order to open a peritoneal abscess, to drain Douglas's pouch, etc. Whenever intestinal contents appeared on the dressings, as was often the case, indicating a fistula, all plugging was removed, and the wound cavity was kept clean by irrigation without pressure. All cases healed without requiring operation.

92. Extravesical Suprapubic Prostatectomy.

STOCKUM (*Zentralbl. für Chir.*, No. 3, 1909) holds that though the suprapubic is preferable to the perineal method of prostatectomy, the former is still to be regarded as a dangerous operation, and that it is therefore advisable to make effort to improve its technique and to diminish as much as possible its undoubted risks. The following description is given as a modification of the high operation, devised by the author and practised with success in two cases of enlarged prostate. In this procedure, which is named "extravesical suprapubic prostatectomy," the enlarged gland is first attacked at its urethral portion, and the only opening made in the upper part of the bladder is a small puncture which serves for the introduction into the vesical cavity of a drainage tube. The usual median incision having been made above the pubic symphysis and the recti muscles separated, the operator's finger is passed downwards in front of the bladder until it reaches the vesical end of the urethra and the enlarged prostate. In order to obtain good access to the gland the fatty tissue behind the symphysis, together with the fold of peritoneum, should be carefully stripped away from the bladder, but not further than is absolutely necessary. The lateral paravesical connective tissue should be left undisturbed. Over the upper part of the exposed prostate, a little to one side of the middle line, a short vertical incision is made through the capsule into the glandular tissue. Through this opening the surgeon introduces at first one finger and afterwards two fingers and enucleates the gland, guidance being afforded by a catheter previously introduced along the urethra into the bladder. During the enucleation the prostate is pressed upwards and forwards by an assistant's finger in the rectum. After the removal of the enlarged gland the wound is closely packed with gauze with the object of preventing secondary haemorrhage; after the introduction of a drainage tube into the bladder the upper portion of the abdominal wound is closed by sutures. In one of the author's cases the gauze packing and the vesical drainage tube were removed on the fifth day, and for the next seven days the bladder was drained by a urethral catheter.

OBSTETRICS.

93. Contracted Pelvis.

AT the International Congress for Gynaecology held in Geneva in 1896, the frequency of contraction of the pelvis in the various countries was discussed, but inasmuch as the data obtainable were insufficient, the subject was postponed for a future occasion. A. Hegar now takes up the same theme and deals with the whole problem briefly in the *Muench. med. Woch.* of August 25th, 1908. Collecting his facts from the work of others, he finds that in Austria-Hungary 8.08 per cent. of pelves which were measured proved to be contracted. Dohrn found the percentage in Germany to be between 12 and 20. Barnes found that in England 0.4 per cent. of the examined pelves were flattened and 0.12 per cent. generally contracted. Hegar suspects that some mistake must have arisen in these measurements, as they are so much lower than those made in Germany, although he recognizes that much is done in England to guard against deformities in the way of exercise, good nutrition, etc. Ogata found that with the exception of one district, where osteomalacia and rickets are prevalent, no contracted pelves are met with in Japan. Simpson and Stenat found that the percentage for Scotland was 6.3 to 6.9, while Glasgow gave a percentage of 10. Möller worked the material in Norway up and found that in the northern countries contracted pelves were very uncommon. Brandt and Petersen, however, found 3.61 per cent. In Denmark it appears to be about 4 per cent. The reasons why contracted pelvis is so much less common in Norway and Sweden than in Germany is, in Hegar's opinion, not difficult to discern. The women in the two former countries are better cared for, they work healthily in such callings as agriculture, forestry, shipping, etc., and not in the industries. Alcoholism is being effectually battled against, and, last but not least, the women nurse their own babies. Developmental disturbances play a large part in the etiology of this deformity. The beginnings may be laid down in fetal life, or some noxious influence may act early in independent life. In infantilism it is not only the pelvis which shows the disturbance of development. Freund and Mendelsohn have shown that infantile types of the pelves are frequently associated with stenosis of the upper aperture of the thorax. The noxious influences which may contribute to this end are largely to be neutralized by breast feeding in infancy, by proper feeding, good hygienic conditions in the home, sufficient exercise in fresh air, and the avoidance of taking part at an early age in the so-called social pleasures, for example, theatre, concert, and ball attendance, during childhood. Next, the prevention of certain diseases must be regarded as preventive measures

against the development of contracted pelvis. Of these, chronic infections, and especially tuberculosis, are the most important. Cretinism is a cause of contracted pelvis. Added to infantilism and cretinism, rickets must be mentioned as a cause of this condition. The recognition of the etiology of contracted pelvis must serve as a basis of preventive measures. Hegar points out that a study of this problem, if carried out properly, will give the index for preventive treatment, and his remarks tend to give a guidance for such a treatment.

94. Pyelitis in Pregnancy: Irrigation.

STOECKEL (*Zeit. f. gynäk. Urologie*, vol. i, part i, 1908) writes on the diagnosis and treatment of this complication of pregnancy, having already demonstrated his views and practice at the eightieth meeting of the Deutsche Naturforscher und Aerzte at Cologne in September. He observes that the disease of the kidney is actually caused by the pregnancy, that retention of urine in the ureters plays a prominent part in the production of this complication, that the urine in pyelitis contains the *Bacillus coli* either alone or with other germs, and that pyelitis is not only most frequent but also most severe when the right kidney is affected. Diagnosis, Stoeckel insists, is not easy. Pyelitis is very often overlooked when cystitis is present, and when the bladder remains healthy the clinical symptoms simulate inflammatory disorders of the gall bladder, vermiform appendix, and uterine appendages. Cystoscopy with double catheterism of the ureters can alone make diagnosis sure. As for treatment, induction of abortion is to be rejected, and nephrotomy is only to be practised when there is evidence of true pyonephrosis. The right treatment, eminently surgical, is irrigation of the renal pelvis with antiseptic solutions, such as collargol. Five women have already been successfully treated by this method, the pain and fever disappearing and the pregnancy remaining uninterrupted. All the children were saved and reared. Stoeckel reports three cases, and writes the technique of his method, adding an illustration.

GYNAECOLOGY.

95. Placental Syphilis.

W. O. PAULI (*Johns Hopkins Bull.*, November. 1908) says the fact that various authors have reported the finding of the *Spirochaeta pallida* in the placentae of syphilitic infants, while other observers have failed to find the organisms in the placenta, though they were present in the majority of instances in the fetal organs, gave rise to this investigation. The diagnosis of syphilis of the placenta was based on the presence of the following conditions. On gross examination: (1) An increase in the size and weight of the placenta in relation to that of the child, the increase being from 1–6 (the normal ratio) to 1–4 or even more; (2) a pale pink coloration and greasy feel of the maternal surface of the placenta; (3) an abnormal width and depth of the intercotyledonary fissures. On microscopic examination: (1) A thickening and clubbing of the ends of the finer branches of the villi; (2) absence of blood vessels in the finer branches of the villi and their partial obliteration from endarteritis in the rest; (3) an abnormal density and hypernucleation of the stroma. During the year 1907–8, 825 placentae were examined, and of these 25 were pronounced syphilitic, after microscopic examination of sections, by Professor J. W. Williams. An autopsy was made on the infants in 16 out of these 25 cases. In 14 cases the diagnosis of syphilis was made on anatomical grounds, and in 11 of the 16 was established by the finding of the *Spirochaeta pallida* in the fetal organs. Twenty-four of the 25 placentae were examined for the spirochaete (the tissue in one case being lost), but in no case was it found even after careful and repeated search. Levaditi's method of staining was used in every case. The grounds for making an anatomical diagnosis of syphilis in the fetus were (1) an increase in the size and weight of the liver and spleen; (2) the presence of pneumonia alba: and (3) the presence of definite osteochondritis at the epiphyseal line of long bones. In the literature the author has been able to find 120 cases of examination of syphilitic placentae for the *Spirochaeta pallida*, with positive results in only 16 of these. He concludes: (1) That the spirochaete is rarely found in syphilitic placentae; (2) that the anatomical changes observed in the placentae are the result of toxins produced by the spirochaetes in the fetal organs; (3) that the placenta is not the nidus of infection. This comparative immunity of the placenta, particularly of the maternal part, may be due to its close connexion with the maternal blood and its contained antibodies or immune substances.

THERAPEUTICS.

96. Treatment of Pernicious Anaemia.

G. KLEMPERER records the results of some experiments made on patients suffering from pernicious anaemia (*Berl. klin. Woch.*, December 28th, 1908). The usual treatment has proved itself incapable of preventing recurrences which sooner or later end with death. Cases, however, are recorded which have lasted for as long as thirteen years, showing numerous recurrences. The characteristics of the disease include the marked diminution of red blood corpuscles, with an increased haemoglobin index, the presence of nucleated red cells, including megaloblasts, while the white corpuscles are not increased in number, and may be diminished. His therapeutic experiments are divided into two chapters. The first were conducted with cholesterin. That substance occurs not only in bile, but also in practically every animal and vegetable cell. It has been shown that cholesterin becomes visible when the cell dies, and when destruction of body cells takes place, cholesterin enters the blood freely, and a sort of lipoid-aemia is produced. When red blood cells are destroyed in large quantities, the bile becomes richer in cholesterin, and the same substance appears freely in the faeces. Further, it has been shown that the haemolytic action of a substance called saponin can be prevented by cholesterin. Cobra poison is also neutralized by this substance. It has been employed in the treatment of the anaemia following cobra poison lecithide intoxication with good results by Morgenroth. The same author has suggested that it might be of use in pernicious anaemia. If cholesterin is capable of acting beneficially in this disease, it would be clear that pernicious anaemia is a haemolysis. This, however, is not recognized up to the present. No free haemoglobin has ever been found in the serum of the patients, nor has haemoglobinuria been noticed, although the presence of urobilin may be regarded as a sign that red blood cells have been disintegrated and the contents set free. Klemperer further states that the cholesterin content of the serum of pernicious anaemia patients has been determined in a few cases and is not diminished. Notwithstanding these objections, he employed cholesterin as a form of treatment. The difficulty of applying cholesterin in a 3 per cent. solution in oil was found to be considerable, as the patients did not tolerate the oil well and could scarcely be induced to swallow it. Previous experiments, however, had taught him that the ingestion of milk, cream and butter in large quantities increased the quantity of cholesterin considerably in the serum. Butter and other milk products contain considerable amounts of cholesterin. One litre of cream and 200 grams of butter correspond to 2.1 grams of cholesterin. By boiling these with gelatine and sugar, and in other ways, it is possible to prepare this quantity of cream and butter so that the patients will take it in every day. Some patients only took half this quantity, but even this quantity proved itself capable of exercising a marked effect on the general nutrition. In all, 8 cases were so treated. They were placed on a mixed diet with as much milk, cream, and butter as they could take. In order to enable them to digest the large quantity of fat more easily, they were given small doses of brandy and a powder consisting of calcium carbonate and calcium phosphate. Only one patient was treated by means of the cholesterin alone, while the other 7 patients, whose illness was too severe to chance it, were given arsenic as well. The first patient put on 6 lb. in weight, and his red blood cells increased from 2,720,000 to 2,930,000 per cub. mm. His general condition was materially improved. In two of the other cases the treatment was begun with arsenic (atoxyl), and as soon as some improvement manifested itself the cream and butter treatment was pushed. The weight improved under this, and the symptoms of the disease also diminished. The results, however, were not so brilliant as would justify him to be satisfied with them, and for this reason Klemperer sought for a better form of treatment. The possibility that pernicious anaemia may be an infection, and the occurrence of severe forms of anaemia in kala-azar, suggested that the more modern forms of arsenic might be tried. He therefore applied arsacetin, which Ehrlich has recentiy introduced for other forms of disease —namely, for the protozoal infections. He injected 0.1 gram of this substance subcutaneously in a 10 per cent. solution, and worked the dose up to 0.6, without any ill effects presenting themselves. The effect on the blood was very marked. The number of red blood corpuscles in the 6 cases in which arsacetin was employed increased very considerably. The improvement only continues up to a certain limit, and he has found that it is then useless to continue the treatment. If a recurrence sets in later the

treatment can again be taken up. He does not claim that either of these two forms of treatment can cure pernicious anaemia; but both have done good in all his cases, and he considers that this, at all events, is one step onwards.

97. Sabromin.

EULENBURG (*Mediz. Klinik*, November 8th, 1908) has tried sabromin in 14 cases, sufficiently long to judge of its efficacy, especially as compared with other bromine preparations. Six of these were cases of epilepsy, which had all been treated for a long time previously with other bromine preparations, more or less adequately. Bromine, given in the form of sabromin, gave equal if not better results than twice the amount given in the form of alkaline bromides. A striking success was obtained in the case of a lad of 18 who had had seven severe fits during the previous year, the two last six weeks and ten days respectively before the commencement of the treatment. Four tablets (2 grams) were given daily, and no further fit occurred, so that five months later the dose was reduced to three tablets, and later to two. No unpleasant side-effects occurred, and the psychical state remained unaltered. In 2 cases it was found necessary to add other bromine preparations. In several cases increase of weight (1½ to 5½ kilog.) occurred during the use of sabromin. In the other 8 cases, of chronic neuroses, sabromin was strikingly successful in 2—one a case with attacks of psychic depression, and the other an elderly lady with obstinate pruritus. In the latter case the pruritus completely disappeared after hardly a week's treatment. The drug proved very useful in 2 cases of sexual neurasthenia, but in the other cases it was less successful. The cost is M. 1.35 for twenty tablets. Sabromin contains 30 per cent. bromine, as against 67 per cent. in potassium bromide. It should always be given one hour after meals, and should be either masticated or broken up in water before taking. It is tasteless, and causes no gastro-intestinal disturbance or signs of bromism. Eulenburg only once saw a slight acne.

98. Paraganglin in Senile Tremor.

TARABINI AND MASSAGLIA (*Gazz. degli Osped.*, December 13th, 1908), in view of the recent experimental work in relation to the parathyroid glands and their influence over various convulsive muscular attacks, have tried the effect of paraganglin (Vassale) in two cases of senile tremor. Whilst believing that senile tremor and paralysis agitans own a more or less common origin, and may, indeed, be looked upon as different degrees of a more or less similar condition, they hold that the two affections are rightly separated from a clinical point of view. They differ, for example, in origin; senile tremor always begins in a slow and subtle manner, whilst paralysis agitans sometimes begins quite suddenly, and attacks men rather than women. The tremor in paralysis agitans is at first limited to the limbs, whence it is diffused to the body at large and to the head; on the other hand, the oscillations of senile tremor affect the head, jaw, and upper limbs, and are simple in type (no twirling movements of the fingers such as one often sees in paralysis agitans), and seldom accompanied by the muscular rigidity, sleeplessness, peculiar gait, mask, etc., of the typical paralysis agitans. Both the cases were women, aged 76 and 75, and the drug was given in tabloid form. In the first case, it was noted that after about fifteen days' treatment the tremor was much diminished in intensity, and ceased for more or less long periods, and a troublesome pain in the muscles of the neck was also much relieved. No actual cure was obtained, but so much relief (far more than had ever been obtained by any of the numerous drugs previously tried) was effected that the patient, when the treatment was suspended for a short time, strongly urged its renewal. In the second case an absolute cessation of tremor occurred for a short period after the treatment was commenced, but unfortunately this proved to be only temporary, and it returned as badly as ever after a few weeks.

99. Synthetic Suprarenin.

KRAUPA (*Mediz. Klinik*, September 6th, 1908) has tested suprarenin, prepared synthetically, with adrenalin, tonogen, and suprarenin obtained by extraction from the suprarenal capsule. Synthetic suprarenin is a solution of the chloride in physiological salt solution in the proportion 1 in 1,000, with 0.6 per cent. thymol added to preserve it. By instilling this in one eye of an individual and one of the other substances in the other eye, he found on comparison that its action was precisely similar in every respect, both in normal and in inflamed eyes. The same held good for subconjunctival injections. On boiling the solution for three minutes, it remained unchanged, and even when boiled for half an hour, no lessened action could be observed. When allowed to remain exposed to the air for eight days the solution became slightly coloured, but retained its action on the vessels completely. Kraupa concludes that synthetic suprarenin is in every respect equal to the other suprarenal preparations, and it is, moreover, cheaper.

PATHOLOGY.

100. The Morphology and Biology of Malignant Tumours.

C. LEWIN is of opinion that neither Cohnheim's nor Ribbert's theories as to the nature of cancer can be accepted (*Berl. klin. Woch.*, December 16th, 1907). The former believed that cancer was caused by the growth of widely distributed embryonic residues, but he failed to produce malignant growths by transplanting embryonic tissue into animal organisms. The latter thought that cancer was brought about by a disturbance of the arrangement which keeps the cells of the organism in regular connexion with one another. This disturbance was supposed to be called forth by a primary overgrowth of connective tissue, which caused the expulsion of the cells from the organic connex. He is further convinced that all the attempts to produce cancerous growths by chemical or mechanical stimuli have failed, although he owns that Fischer has succeeded in producing an atypical overgrowth by means of scarlet red oil. The workers who pinned their faith on a parasitic origin of cancer have also failed to reproduce anything at all similar to a malignant growth artificially. The work which certain experimenters have been carrying out recently, however, has thrown some light on the dark problem. Ehrlich, Apolant, Bashford, Borrel, Haaland, and Michaelis have worked with transplantable tumours of the mouse. Striker has utilized lymph-sarcoma of the dog. At first some doubt was expressed whether the mouse tumours were in reality real cancerous tumours. It is now a matter of indifference whether these tumours have an endothelial or epithelial origin, since their malignity has been amply demonstrated. Apolant, however, has conclusively shown that the mouse tumours were real epithelial growths which almost always had their origin from the mamma. The slight infiltration of these tumours was accounted for by the fact that they grew in very loose tissue, the subcutaneous tissue. Haaland has further shown that a large percentage of the transplanted tumours gave rise to metastases in the lungs. He owns, nevertheless, that there are many points in which these tumours differ from cancer of human beings. In order to meet this objection he now brings forward an account of the behaviour of a mammary carcinoma of the rat, which he thinks is more analogous to that of the human subject than any of the tumours of mice or rats which have yet been described. This tumour is now in its thirteenth generation. Its chief characteristic is that of forming metastases very freely. In almost every inoculation generation it produced metastases in the lungs, liver, spleen, and in contrast to mouse carcinoma it was transplantable on the peritoneum, where it produced ascites and general cancerous infiltration of the peritoneum. The rats died of cachexia, while the tumours infiltrated solid tissues or internal organs. He reproduces the microscopical appearances of the original tumour, which possesses the characters of a primary pure adeno-carcinoma of the mamma. In the third generation, however, he found that the type had suddenly become modified. Here he found the adeno-carcinomatous structure in places, while the mass of the tumour which developed from a subcutaneous inoculation was that of a typical cancroid. Since this tumour was seen he has succeeded in producing tumours which were either mixed tumours or either pure adeno-carcinoma or pure cancroid tumours. From the fourth generation onward, the peritoneal inoculation led to solid carcinomatous growths without any keratinization and without prickle cells, while keratinization was always well marked after subcutaneous inoculation after the seventh generation. He denies the possibility that the primary tumour was in reality a mixed tumour. This he bases on a number of contentions. In the third series of the fifth generation he found that the connective tissue began to overgrow, and this overgrowth consisted chiefly of spindle cells. On inoculating these outgrowths further, he found that he obtained tumours which were indistinguishable from Ehrlich's mixed-celled sarcoma, some of which showed a preponderance of spindle and some of round cells. He succeeded in raising the virulence of these tumours until he obtained inoculation tumours in 100 per cent. of the attempts. He concludes with some critical remarks on the problem of inherited and acquired immunity towards these artificially-produced tumours.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

101. Achylia Gastrica in Childhood.

IT is usually said that achylia gastrica becomes increasingly frequent with age. According to Brauner it is seldom, if ever, found before puberty. A. Hecht (*Wien. klin. Woch.*, November 5th, 1908) has seen the following case: A girl, aged 9, was said to have been healthy till the age of 4, when she suffered from abdominal pain and frequency of micturition. She ate well, but lost flesh, and was backward developmentally. On admission to hospital there was extreme emaciation with dry scaliness of the skin. There were slight dyspnoea and dullness, and harsh respiration anteriorly at the right apex. The liver and spleen were of normal size. The appetite was good. Two to five pultaceous or liquid, fetid, clay-coloured stools were passed daily, and the diarrhoea persisted as long as the child was under observation (from June 22nd to July 17th). The urine and temperature were normal. Von Pirquet's tuberculin vaccination gave at first a negative, but later a positive, result. An injection of tuberculin was followed only by a local needle-track reaction. A blood count gave no important information. The child was, on June 24th, placed on A. Schmidt's No. 2 test diet, consisting of ½ litre milk-cocoa and a piece of toast (*Zwieback*) for breakfast; beef-tea with an egg during the morning; oat-water with milk and half the yolk of an egg, 5 dgm. of rather overdone minced meat, 5 dgm. of mashed potatoes with butter, and a piece of *Zwieback* for dinner; for tea the same as for breakfast; and mucilaginous oat-water with half the yolk of an egg for supper. On June 26th the stools were pultaceous, frothy, of a bright greyish-yellow colour, and strongly alkaline—possibly from the admixture of ammoniacal urine. The shreds of mucus in the faeces, when stained, appeared microscopically as thick red filaments, and contained but few cellular elements. The presence of numerous muscular fibres with intact striation and no signs of digestion, the paucity of connective tissue, the absence of starch, and the presence in the faeces of small white granules, which consisted almost entirely of needles of fatty acids, with exceedingly few droplets of fat, all indicated serious disturbance in the digestion of meat, with a well-maintained fat-splitting function. Repeated examination of the gastric contents after test meals showed the constant absence of rennet and HCl. Scarcely any fat was split up in the stomach, and pepsine was greatly deficient, and at times entirely absent. On one occasion trypsine could not be found in the faeces, but this was of doubtful significance. The patient was probably tuberculous, but the chronic diarrhoea was evidently due to gastric achylia. The writer believes that if the gastric functions were investigated in every case of chronic diarrhoea achylia gastrica would be found not infrequently.

102. Pigment Disappearances in Skin and Hair.

SCHEIN (*Pester Mediz.-Chirurg. Presse*, October 25th, 1908) considers that pigment atrophy in a large number of cases, if not in all, follows upon previous excessive production of pigment. For example, grey hairs appear earliest from follicles whose previous hairs have been richest in pigment, or longest, or have grown most rapidly, and thus been replaced more often by successive hair-generations (the life-length of a hair is from two to four years)—that is, where much pigment has been previously formed and consumed. Schein quotes a case where the hairs had been previously noticeable for depth of pigmentation. That long hairs whiten sooner than short ones is shown by the fact that the hair of the head and beard become grey before that of the rest of the body, the hair on the shoulders, breast, and pubes before that of the eyebrows. The beard whitens soonest at that part of the chin where, at puberty, the first hairs grow, at which place they also grow to be longest. Pohl found that in senile baldness the individual hair generations were shorter lived, and it may be also that senile grey hairs follow on the excessive pigment production caused by an increased number of hair generations. In a case of trichiasis where epilation was frequently performed Schein noticed after a time that the new eyelashes were white. After the application of the Roentgen rays darker hairs grow first, and these are followed by lighter ones. Vitiligo is very frequent in negroes, especially at parts rich in pigment—for example, the penis, scrotum, or where the skin is exposed to the rays of the sun. The author finds his principle applicable in the explanation of leucoderma syphilitica, and of the pallor surrounding syphilitic papules. Jadassohn used Finsen rays in a case of vitiligo and found that under their influence excessive pigmentation was replaced by pigment atrophy. That the skin from which grey hairs spring is normally pigmented is explained by the much smaller demand on pigment made by the skin than is made by hairs. Schein concludes: (1) That pigment production in man is limited; it differs in different races and individuals—for example, it is much greater in negroes than in Caucasians, in dark people than in light. Different organs and tissues possess different powers of production. (2) The upper limit of pigment production is sooner reached in dark than in light people. (3) When this limit has been reached further stimulation leads to atrophy, which will account for cases of sudden bleaching of hair. (4) This stimulation may be the same which previously caused the excessive pigmentation.

103. Cutaneous Hyperalgesia.

ELSBERG AND NEUHOF (*Amer. Journ. Med. Sci.*, November, 1908), from the examination of a large number of cases of abdominal affections, verify the findings of Henry Head as to the diagnostic value of cutaneous hyperalgesia (Head's zones) in abdominal disease. The pin method of examination was adopted, and found to be satisfactory for practical purposes, a sharp pin being held between the thumb and index finger of the right hand and drawn slowly along the surface of the skin, while the nail of the index finger rests upon the patient's skin and presses equally along the area examined. The patient is told to say "now" as soon as the pinstroke becomes painful, and care must be taken that the pressure of the pin point remains constant, especially as it passes over the groin or costal margin. By this means zones can be mapped out, and the procedure repeated a second time, both the patient and the operator keeping their eyes away from the pin, so as to eliminate as far as possible the personal equation in the examination. The zones may appear very early in the course of visceral affections, and they usually persist throughout the course of the disease, disappearing promptly with the relief of the lesion. Occasionally, however, zones may disappear suddenly, with a persistence or sudden increase in the general symptoms; and when such is the case, it may be of grave significance, betokening in mild cases of appendicitis the development of severe symptoms, and rendering operative interference imperative. Zones may be absent, and while such absence does not mean that there is no disease of the organ suspected, the presence of a zone implies an undoubted lesion. For purposes of diagnosis a Head zone must not be the only factor relied upon, though in the absence of all other localizing signs such a zone may indicate the organ affected. As an aid to diagnosis, and used in conjunction with other symptoms, a zone may be of value to substantiate conclusions arrived at from a general consideration of all the signs and symptoms. In patients with marked abdominal distension and rigidity the presence of a characteristic zone has greatly helped in the differential diagnosis between disease of the gall bladder and appendix, gall bladder and kidney, and between disease of the appendix and uterine appendages. In the early stages of abdominal disease such zones of hyperalgesia may be of value in helping to form an early diagnosis. The degree of cutaneous hyperalgesia has no constant relation to the severity of the pain or gravity of the mischief attending the lesion. The presence of several zones may indicate a combined lesion of several adjoining viscera, but in such cases the possibility of the cutaneous hyperalgesia being due to a lesion of the cord must be borne in mind. Though they may vary somewhat in extent and outline, these zones have a characteristic location, and present very constant and definite areas of hyperalgesia, but the presence of such a characteristic zone, while being evidence of an affection of the corresponding abdominal viscus, need not of necessity point to the affection which is causing the symptoms in any given case.

SURGERY.

104. Rubber Gloves and their Substitutes.

G. BECKER (*Deut. med. Woch.*, December 10th, 1908) says that Unna recommended, in 1886, covering the hands with a layer of soap, in order to cut off the bacteria present in the deeper parts of the epidermis, when it was required to disinfect the hands. Mikulicz suggested using thread gloves, Perthes suggested using silk stockinette gloves, and Wölfler suggested leather gloves; but all these methods proved to be insufficient for the purpose. Friedrich found a solution of the difficulty in 1898 in the shape of rubber gloves. It has been shown that these can be sterilized, and provided that no cuts or tears are present, the field of operation may be kept free from bacteria from the hands of the operator by their means. The sterilization may be carried out by means of steam or by boiling. Steam has the advantage that the gloves can be used in a dry condition. The author shows that the fears which have been expressed that the steam may not penetrate into the interior of the glove is not well founded, and he has found experimentally that gloves sterilized by steam are sterile inside and outside. Various devices have been suggested to guarantee the full action of the steam, such as stuffing the fingers with wool or other material, hanging the gloves up by the fingers, or putting them on nickel skeletons, but all of these devices are unnecessary. There is, however, no doubt that sterilization does attack the rubber, and after two applications of steam the gloves tear very easily. Boiling is better tolerated, but this has the disadvantage that after the process the gloves become sacklike and no longer fit the fingers. It is uncomfortable to wear gloves which have been boiled. Gloves are therefore costly as a means of protecting against infection by the hands. An advance has been made in this direction by the introduction of a method of disinfecting the surface of the gloves by washing in water and soap for three minutes, and then disinfecting for two minutes in corrosive sublimate solution. A further disadvantage of gloves is found in the fact that they can be cut by instruments, and then the danger of wound infection is greater than if no gloves had been worn at all. It was to overcome these disadvantages that certain substitutes for rubber gloves have been introduced. The author mentions two of these, Klapp's *chirosoter* and Wederhake's *dermagummit*. The first named is a solution of a waxy and balsamic body in carbon tetrachloride, which is sprayed on the hands and rubbed until dry. It is supposed to fix the bacteria in the deeper layers of the epidermis as paraffin fixes the specimen in embedding. Becker has experimented with soiled hands and chirosoter, and has found that relative and not absolute sterility of the surface of the skin could be obtained by this means. He mentions that the space beneath the nail is not completely shut off, and that reliable results can therefore not be expected. Dermagummit is prepared by Dr. Degen and Kuth's factory in Düren (Rhine), and is a patented solution of gum elastic vulcanized by iodine. It is sold in sterile bottles, and should be applied to the hands after these have been disinfected in the usual manner and dried with a sterile towel. The rubber solution is rubbed on the hands until a thin layer covers every part, and is then allowed to dry. It is advisable to powder the surface with sterile talc or caolin to prevent the hands from remaining sticky. Each application to the hands costs from 4 to 6 pfennigs (1 pfennig is nearly one-hundredth of a shilling), but the cost of removing the layer must be added to this. The removal can be done with carbon tetrachloride, ether, or benzine. First Becker tested whether chemical substances like the ferrocyanide of potassium could pass through the layer, and he found that this was not the case. Next he tested the efficacy of the sterilization process. Hands were infected with *prodigiosus* cultures and then covered with dermagummit. On rubbing sterile potato on the hands some remained sterile, some showed growth, but none showed as free growth as did the control potatoes rubbed on the hands before the dermagummit was applied. Passing silk behind the nails of the ordinary hands after treatment with dermagummit removed micro-organisms which grew well on agar. Probably the drawing of the silk through cut into the rubber coating. Although he admits that when the hands are disinfected before the application of dermagummit the bacteria are very largely diminished, he does not consider that we have any right to rely on the absolute sterility of hands treated with this material. He claims that sterile rubber gloves are more reliable, and even when soiled these can be rendered absolutely sterile in five minutes with water, soap, and perchloride of mercury; 8 per cent. formaldehyde or formogen achieves the same effect in one minute.

105. Nerve Suture.

ALFRED S. TAYLOR (*Amer. Journ. of Orthopaedic Surgery*, November, 1908) says that, concerning the regeneration of the distal portion of a divided peripheral motor nerve, there are two views. The "Peripheralists" assert that it undergoes a process of regeneration from the neurilemma cells, independently of the proximal stump and the central system. This stops short of the return of function, which comes only after the reunion of the distal segment with the central system. The "Centralists" maintain that regeneration comes only as a result of the downgrowth of central axis cylinders. Whichever of these theories is correct, the fact remains that even after twenty-nine years a return of voluntary control over paralysed muscles has followed the operation of nerve suture. Of first importance is the condition of the paralysed muscles, the natural tendency of which is to undergo fibrous degeneration. The rapidity with which this change develops varies very greatly. In every case the muscle condition must be tested by careful electrical test. Neglect to prevent the occurrence of deformities in paralysed limbs results in the occurrence of contractions of muscles and ligaments and maldevelopments of bones, and offers mechanical obstacles to movements which makes it impossible for even fully regenerated nerves to restore normal mobility to the damaged area. The paper is illustrated by a plate showing the various types of suture—namely, end-to-end, nerve bridging, nerve crossing or transfer, and lateral implantation, which includes a variety of procedures. The simple implantation of the paralysed nerve into a longitudinal slit in the sound nerve gives very satisfactory return of motor power, causes the minimum of disturbance in the muscle field of the sound nerve, and it should be the method of preference. The release of a nerve from constriction which has caused more or less complete peripheral degeneration has a wide field of usefulness in post-traumatic conditions. Nerve dissociation is practically an intraneural neurolysis in which a nerve trunk is separated into its several bundles to relieve them from the constriction due to increased connective tissue. The first evidences of nerve regeneration appear in improved sensory and trophic conditions. These are very variable in the time of their onset, but they are usually well advanced by the end of three months. Voluntary motion, except in a few unexplainable instances, never returns sooner than three months after operation, and often only after six to fifteen months have elapsed. After voluntary motion begins to return, progress is slow, but continues for several years, and depends upon good after-treatment, and especially upon the interest and co-operation of the patient. The paper contains illustrative groups of cases.

OBSTETRICS.

106. Pernicious Vomiting of Pregnancy.

No satisfactory explanation of the pathology of pernicious vomiting of pregnancy has hitherto been given, and probably the pathology is not always identical. Dufour and Cottenot (*Revue Neurologique*, December 30th, 1908) look to the nervous system to explain the association of gastric disorder and uterine disturbance in pregnancy. They are not dogmatic, but bring forward two cases to show that vomiting of pregnancy, at any rate of the intractable type, may be due to tabes dorsalis. One case only is reported in detail. It is that of a woman in her third pregnancy admitted into hospital in the fourth month for intractable vomiting causing much loss of weight. In her first pregnancy vomiting had lasted from the fifteenth day after the last period preceding conception until the end of pregnancy. In her second pregnancy it lasted from the second month to the end. On examination the following evidence of nervous disease was obtained: The right leg had superficial scars which had been present from infancy; cutaneous sensibility in the right leg diminished, with complete anaesthesia as far as the ankle-joint. The Achilles jerks present. Knee-jerks present, but weaker on the right side and especially so during the crises. At the height of the crisis it could not be obtained (intermittent loss of knee-jerk). The Argyll Robertson pupil was obtained on both sides with diplopia in certain directions. Romberg's sign absent. Slight lymphocytosis of cerebro-spinal fluid. No history of

syphilis could be obtained from the patient or her husband, but the authors consider the above symptoms sufficient to warrant the diagnosis of tabes dorsalis. The first child died two days after birth from icterus, and the second one six weeks after birth (cause not stated). The disappearance of the knee-jerk at the height of the crisis would be analogous to similar observations as regards the Argyll Robertson pupil phenomenon observed by Erb and Mantoux. Further interrogation elicited the interesting statement that since her first pregnancy the patient had had severe abdominal pains with vomiting and diarrhoea occurring every two months, although she had never so suffered previously. The pregnancies apparently acted as an excitant in a tabetic patient, just as we know that atmospheric changes, fatigue, excess in drink, and coitus may provoke a crisis in a tabetic. Tarnier in his lectures apparently did not recognize tabes as a cause of pernicious vomiting in pregnancy, for he says that one must distinguish between the two conditions, namely, tabetic crises and pernicious vomiting.

GYNAECOLOGY.

107. Treatment of Retroversion of the Uterus.

P. STRASSMANN (*Berl. klin. Woch.*, November 2nd, 1908) states that the estimate that over 50,000 women in Greater Berlin suffer from retroversion of the uterus is not exaggerated. It is, however, questionable whether such a common condition can really be described as pathological. As far as is known, retroversion does not occur in the lower animals. That this is in part due to the upright position of the human being is certain, but it appears also to be due to the fact that women have wider pelves than other female animals, and the possibility of backward displacements are greater in the former than in the latter. True, such animals as apes have not been subjected to minute examination, which would be necessary to determine whether the uterus is at times tilted backwards. Strassmann points out that all abdominal organs have a dorsal convexity and a ventral concavity. Each organ develops with a flexion forwards. In the upright position the fundus is normally lower than the os. In the cadaver the ligaments are slackened, and the uterus is found to have sunk backwards on opening the abdomen. A sudden misplacement never takes place. Even when the trauma is severe enough to rupture the bladder or to dislocate a kidney, the uterus remains untouched. It may be considered to be the most protected organ in the whole body. Retroversion and retroflexion, which is merely another manifestation of a less pronounced degree of the same condition, either arise as a congenital defect or the false position is gradually acquired. The congenital displacement is present in about one-sixth of all the cases. In the first place, Strassmann mentions a distended bladder as a cause of acquired displacement. The next contributing cause is overloading of the rectum. This levers the cervix forwards, and combined with the backward pressure of a full bladder, which acts on the fundus, the uterus is tilted backwards. These two factors are especially active in lying-in women. The fact that the abdomen has emptied itself of from 5 to 6 kilogs. (the weight of the fetus, placenta, and liquor amnii) explains the absence of desire to pass water or to empty the rectum. If no aperient is given, the lying-in woman does not have a motion until the sixth or seventh day *post partum*. The ligaments, and especially the two round ligaments, hold the uterus in its normal anteflected position when other causes tend to disturb this position. A weakening of these ligaments must, therefore, be followed by a failure of natural reposition when the bladder remains full or when constipation continues for some time. The condition of the floor of the pelvis, and the weight of the organ when involution takes place slowly or incompletely also play an important rôle in the genesis of retroflexion and retroversion. Other contributory causes are also mentioned. The author then discusses the results of the displacements. It is a mistake to consider that the uterus alone is turned back. The broad ligaments are thrown out of position with the uterus, and many of the complaints are probably due to this. The first result is that the vessels become twisted, and although the arteries scarcely suffer in their elasticity, the veins become altered and a varicose condition of the ligament results. In response to the venous obstruction, the uterus becomes congested. The posterior lip becomes thickened and bluish, and not infrequently shows an erosion. Menstruation becomes profuse and a catarrhal endometritis develops. Pain arises from the effort on the part of the uterus to empty its contents against the laws of gravity. The displacement of the ovaries is also important. Follicular haematoma arises, and eventually may lead to adhesions. Small cystic degeneration of the ovaries is not an infrequent find in these cases. The capability of conception and of carrying the fetus is often disturbed. Women with retroverted uteri may conceive, and some of these can pass naturally through the course of pregnancy. Many women under these conditions, however, are sterile, and it is within Strassmann's experience that women have objected to have the retroversion reduced, because they preferred to remain sterile. In Java midwives at times press the uterus into a retroverted position after delivery, in order to produce sterility. This may lead to severe and even fatal inflammations. Next he deals with the retroflexion of the bladder, which follows upon that of the uterus. After dealing with various symptoms which are met with in connexion with displacements he proceeds to discuss the treatment. In cases in which spontaneous correction of the malposition has taken place in pregnancy it is wise to assist matters by giving ergot of rye after delivery or abortion. When the retroversion is due to posterior adhesions following a gonorrhoeal or other inflammatory affection of the tubes, it would be bad gynaecology to attempt a reposition, and, at all events during the early stages, no attempts to deal with the displacement may be made. There is, further, no need to interfere with retroversion in old women. Pessaries may be applied after replacement in suitable cases; and Strassmann believes that, provided no deep tears in the cervix and no unrepaired perineal rupture are present, a case of retroversion taken early may be cured in one year by a ring. He prefers zinc rings to the soft rubber pessaries. Thomas's and S-shaped pessaries are also useful in some cases. When a misplaced uterus has given rise to symptoms which do not yield to conservative dietetic and balneotherapeutic means, operative treatment should be adopted. Even replaceable misplacements may with justification be fixed in the anteverted position operatively. Ventrifixation yields excellent results. It forms a certain method of curing the condition, and does not disturb a subsequent pregnancy. The operation called "Alexander-Adams's," which consists in shortening and suturing the round ligament in the inguinal canal, can also be utilized for the condition, and leads to good results. It is especially useful when a rupture has to be operated on, as the two conditions can be cured at the same time, and two instruments can be disposed of. When adhesions are present the operation is of no use. With regard to vaginofixation, he points out that disturbances in pregnancy of a serious nature have arisen, and he concludes that the method cannot be recommended. Prophylactically, he advises regulation of the evacuations, especially before and during menstruation. Recent displacements should be detected early, and this implies an examination after every case of lying-in before the patient is discharged as well.

THERAPEUTICS.

108. Antipneumococcic Serum.

G. LANDMANN (*Deut. med. Woch.*, November 26th, 1908) has been experimenting with pneumococci with the object of preparing a powerful antibacterial serum. He found that it was advisable to utilize a very large number of strains, and, adopting a suggestion of Ehrlich's that the bacterial cell possesses variations in the haptophoric groups, he used horses, oxen, and sheep to gain his antibacterial serum, and uses these serums mixed. At first it was assumed that this serum would not be standardizable, but further experiments showed that by using strains which had been increased in virulence and by forcing the immunizing in the horses he was able to produce a serum which lent itself to the usual methods of testing and standardizing. The price of the serum was necessarily much increased by the forced treatment of the horses, as the number of horses which died under the treatment was not inconsiderable. He, however, hopes to be able to reduce this mortality, and consequently the price of the serum, in the future. The value of his serum has been determined as follows: One immune unit is stated to be contained in 1 c.cm., when 0.01 c.cm. of a serum protects a mouse against the effects of an injection of from 10 to 100 times the lethal dose of a living culture applied twenty-four hours later. His serum contains from 10 to 40 immune units per c.cm. He has

further found that his serum acts curatively as well as prophylactically. Animals could be saved if injected with serum from six to eight hours after infection. The usual space of time between infection and death in experiment animals being twenty-four to forty-eight hours, this curative action must be considered satisfactory. He has not come across any strain against which the serum had no influence in animal experiment. So far he has no evidence of its value in human therapy, but he advises its employment in doses of 400 units daily for curative efforts, and one or two doses of 200 units for prophylactic measures. The serum must naturally be employed during the early stages of the various pneumococcic infections, of which he instances ulcer serpens, pneumonia, etc., if success is to be attained.

109. Fibrolysin in Pleural Adhesions.

It is not uncommon that a free deposition of fibrin takes place after the more or less complete absorption of a pleural effusion. This leads to adhesions between the two layers of the pleura, and thus binds down the lung to the chest wall or to the diaphragm. Schnütgen (*Berl. klin. Woch.*, December 21st, 1908) points out that when the affection is recurrent, as is the case in tuberculosis, an induration of over ½ in. in thickness may be formed. The results of such adhesions and induration on the pulmonary circulation need no special description. The clinical symptoms of such adhesions are diminished breath sounds, loss of vocal fremitus, and dullness on percussion. Pain is complained of. Subjective symptoms may, however, be very slight. The treatment usually adopted in such cases is painting the chest with iodine, applying iod. vasogen, and lung gymnastics, but the results of these forms of treatment are rarely apparent. When gymnastics are combined with fixation of the healthy lung, by means of pneumatic apparatus, better effects are obtained. Since fibrolysin (thiosinamin and sodium salicylate) has within recent times been highly recommended for a large variety of internal and external scar formations, the author determined to try it in pleural adhesions. He used Merck's preparation, which contains 2.3 c.cm. of fibrolysin in each capsule, and injected this dose either locally or into the gluteal muscles. The injections were repeated once or twice every week according to the severity of the case. In the majority of the cases the injections were painless, and the only undesired effects were occasional slight rises in the temperature, slight feelings of tiredness, and headache. The objective and subjective symptoms diminished markedly, and in some cases with extraordinary clearness. In reviewing his cases he states that fibrolysin applied immediately after the effusion is completely absorbed, and signs of beginning pleural adhesions can be made out, is often followed by good results, and should therefore always be tried.

110. Sabromin, a New Bromide Preparation.

V. Mering (*Mediz. Klinik*, September 20th, 1908) has investigated the action of sabromin, the dibrombehenate of calcium, so called from its analogous composition to that of sajodin, the monoiodbehenate of calcium. The formula of sabromin is $(C_{22}H_{41}O_2Br_2)_2Ca$, and it contains 29 to 30 per cent. of bromide. It is a colourless, odourless, and, in contrast to the alkaline bromides, tasteless powder, well borne by the stomach, where it is converted into dibrombehenic acid, a substance which has no action upon the stomach, and only becomes absorbed when it has passed into the intestine. The author finds the action of sabromin to be less prompt, but more lasting, than that of the alkaline bromides. He considers the drug especially suitable for hysteria, neurasthenia, nervous excitation, palpitation, sense of anxiety, and nervous insomnia. V. Mering usually prescribes 1 gram two or three times daily, but he has given as much as 6 grams daily over a long period. Potassium bromide contains 67 per cent. of bromide, while sabromin only contains 30 per cent., and since the therapeutic effect of the latter equals that of the former, while the dose is about the same, it follows that a smaller quantity of bromide is required when the sabromin is administered. This may partly account for the fact that signs of bromism have never been observed from the use of sabromin, even in animals to whom very large doses have been experimentally administered.

111. Europhen.

Iodoform acts by the liberation of iodine in the secretion of wounds, and in consequence is much valued both as a disinfectant and as a stimulant to granulations. The disadvantages of the preparation include its highly penetrating smell and its toxicity. P. Meissner (*Berl. klin. Woch.*, August 31st, 1908) points out that even when the odour of iodoform is not objected to, the fact that it is frequently used for soft sores, and that this use is so well known, renders it unsatisfactory to the public. In seeking for a substitute, the chemists have turned their attention to iodized phenols, and in 1901 the employment of isobutyl-ortho-cresol iodide was suggested. This compound is now known as *europhen*. It is gained by allowing a solution of iodine in iodide of potassium to act on an alkaline solution of isobutyl-ortho-cresol. It is a yellow, light powder, possessing a faint odour like saffran. It is insoluble in water, but easily soluble in ether, alcohol, chloroform, and fatty oils. It contains 28 per cent. of iodine. Its physical properties include a capability of adhering well on mucous surfaces and wounds, and in virtue of its lightness small masses are able to cover comparatively large surfaces. Under the influence of moisture, body temperature, and an alkaline medium, iodine is split off, and this, being combined with the secretions, is absorbed and is eventually excreted in the urine. The advantages of europhen as a substitute for iodoform appeared to Meissner to justify a trial, and he therefore applied it in 32 cases of non-infecting chancre. Twelve of these cases were complicated in so far as gonorrhoea was concerned. In all cases it was well tolerated, and the effect was satisfactory. The secretion soon cleared up, the sloughing or dirty surface of the ulcers gave way to healthy granulations, and healing took place steadily. He employed it by powdering a mixture of europhen and boric acid in equal parts every morning and evening by means of a fine paintbrush. The average duration of the healing was between six and ten days. In all cases the powder appeared to diminish the local pain. He has further used it in some cases after the excision of a syphilitic sore. In discussing the action the author states that the splitting off of the iodine is gradual and continuous, and for this reason he is inclined to ascribe special value to the local application. He recommends it strongly.

PATHOLOGY.

112. The Pathogenesis of Tuberculous Neuritis.

G. C. Mirano (*Riv. Crit. di Clin. Med.*, Florence, 1907, p. 681) discusses the etiology of that somewhat rare complication of pulmonary tuberculosis, the appearance of muscular atrophy and sensory disturbances in the limbs, with loss of the reflexes. These symptoms have been referred by some to peripheral neuritis, by others to changes taking place in the spinal cord (myelitis). Peripheral neuritis has been produced in the lower animals by several experimenters by the injection of tuberculin, and degenerative changes in the anterior cornual cells have been recorded in some of these cases. A few observers have even recorded degenerative changes in the cells of the motor cortex, or in Purkinje's cells in the cerebellum, in cases of pulmonary tuberculosis. Mirano's patient, a man of 19, gave a history of tuberculosis acquired about a year previously in a very dusty flour mill; the symptoms were cough, haemoptysis, night sweats, and wasting. Three months before Mirano saw him he began to complain of pains, formication, weakness, and some rigidity in the legs rendering walking difficult, and he had difficulty in extending his fingers. On examination he showed marked tuberculous lesions at the left apex; a few tubercle bacilli were repeatedly found in his sputa, and he gave a positive tuberculin reaction. He was emaciated, with marked atrophy of the muscles of the thigh, of the tibialis anticus and peronei, of the muscles on the flexor aspect of the forearm, and of the interossei in the hands. Steppage gait was marked, and dorsal flexion of the feet was impossible. Romberg's sign was absent. The plantar, patellar, cremasteric and abdominal reflexes were abolished on both sides, and Babinski's sign was absent. The nerve trunks were not tender, and no trophic changes in the skin were seen; sensation (touch, pain, heat) was not impaired. The reaction of degeneration was well marked in the legs and arms; strong currents were necessary, and ACC was often obtained before KCC. Fever was absent. The patient improved much under treatment by rest, good food, antiseptic inhalations, and galvanism to the extremities. The gait improved much, the knee-jerks and cremasteric reflexes reappeared, the reaction of degeneration was less marked. Mirano argues that this case was undoubtedly one of tuberculous peripheral neuritis. References to the literature are given.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

113. Cheyne-Stokes Respiration.

CHEYNE-STOKES respiration is met with in cerebral, cardiac and renal affections, and in some infections and intoxications. It consists of a series of respiratory movements, at first small and superficial, then more deep and rapid. A progressive diminution in the amplitude and rapidity of these movements then takes place, until complete respiratory cessation accompanied by torpor and somnolence occurs. This respiratory rhythm, due to irritation of the nerve centres, may be observed in organic lesions of the nervous system, such as haemorrhage, softening, degeneration of the vagus nerves, cerebral and cerebellar tumours, acute meningeal affections, and also when there is no organic disease of the nerve centres. In cardiac cases there is no doubt a certain degree of oedema of the nerve centres accompanied by a stimulation of these centres by toxic substances. In chronic renal disease Cheyne-Stokes breathing may appear only in the late stages when the heart becomes dilated, and this fact indicates that by relieving the cardiac dilatation one may cause the Cheyne-Stokes type of respiration to disappear. The most grave form of Cheyne-Stokes respiration, according to Fiessinger (*Journ. des Prat.*, October 20th, 1908), is that dependent upon chronic renal disease not complicated by cardiac insufficiency. For its treatment one employs the same remedies as for uraemia—blood-lettings, milk and water diet; but these remedies are not often so effective in this condition as in uraemia. Injections of morphine or of heroin, the former in 4 to 5 mg. doses, the latter in 2 to 3 mg. doses, give better results. In acute renal disease the prognosis is less grave. A much less grave form of Cheyne-Stokes respiration is that which occurs in cases of renal insufficiency following on cardiac insufficiency. In such cases of these where the heart is much dilated and there are engorged viscera and oedemas, marked improvement can be obtained. For these cases the proper treatment consists of a reduction in the quantity of liquid taken (Huchard's milk and water diet, 1,500 grams in the twenty-four hours), administration of digitalin in very small doses given for some days, then stopped for a few days and again repeated. Theobromine should only be given when anuria is marked, and not before the third or fourth day of treatment. Morphine by subcutaneous injection may be employed, but with the greatest care and caution, but in doses of 2 to 3 mg. is without danger. Morphine calms the dyspnoea and lowers the extreme excitability of the patient. After the fourth or fifth day the milk and water diet may be replaced by broth and milk, then gradually rice may be added to the milk, also cream; potato cooked in water free from salt and boiled eggs may also be given. In Cheyne-Stokes respiration occurring in cerebral diseases the gravity depends much on the extent of the disease. When the disease is limited the altered breathing may disappear, but with extensive disease death is generally quickly brought about. In these cases injections of camphor in oil may be employed. When infections and intoxications are the cause of Cheyne-Stokes breathing it is necessary to direct treatment towards the primary cause. In typhoid fever, diphtheria, small-pox, cholera, and pneumonia Cheyne-Stokes respiration may occur, and in such cases two factors are in action, namely, cardiac weakness and infection with toxic products. In these cases the prognosis is grave; the proper treatment will be to employ cardiac tonics (digitalin, camphor) and diuretics. Certain drugs, such as morphine and the bromides, when used in toxic doses may cause the appearance of Cheyne-Stokes breathing, but with suppression of the drug one may hope for a satisfactory termination.

114. Nutrition and Nervousness in Children.

IN dealing with nervousness in children and the causal part played by malnutrition, F. Siegert states that he only refers to acquired nervousness, and not to inherited cases or to children who have become nervous in response to long-continued illness and consequent nursing and exaggeration of symptoms (*Muench. med. Woch.*, September 22nd, 1908). His cases include children who have been subjected to a special form of strengthening diet. Children who are fed on large quantities of milk to the exclusion of all vegetables, or on milk and eggs, frequently present a typical picture of anaemia, with loss of appetite, and marked constipation. In analysing his cases he finds that a diet consisting of proportionately too much albumen and fat, and too little carbohydrate, alkali, and cellulose, especially when the total quantity is too small, leads in every case to a marked dystrophy, and in these cases nervousness is one of the most salient symptoms. Diets consisting of an adequate quantity of albumen and fat, with too little carbohydrate and no vegetable or fruit, are not quite so harmful, although these, too, lead to typical dystrophies. He gives a number of examples of these cases, and traces in each case the fault to the improper diet. The author attacks the so-called strengthening diets for children very severely, and attempts to standardize the diets for children between 3 and 10 years of age. With regard to the symptoms of that form of dystrophy in which his nervousness is found, he emphasizes the pale, yellow complexion, the want of appetite, the constipation, the restlessness, and the loss of weight. The treatment of this condition, he says, is very simple. The diet should be one which does not lead to unhealthy fattening, but which can cover the requirements of the children's bodies. Eggs should be excluded, as he finds them unreliable and dear. They may, however, be used in cooking certain dishes, such as puddings, macaroni, etc. Meat should be given once a day after the age of 3 in small quantities, and may be either red or white. Cocoa, chocolate, and husked legumens should be avoided. Milk should be limited in quantity, and may best be given in the form of milk puddings (rice, semolina, barley, and others). When constipation is present the bread should be of coarse-grained flour (Graham, etc.). Fruit, both raw and stewed, with a plentiful supply of vegetables and salads, should form a large part of the diet. He gives further details with regard to the meals which he advises and by means of which he has obtained good results.

115. Alleged Dangers of the Conjunctival Reaction.

TEICHMANN (*Mediz. Klinik*, June 28th, 1908) bases the following conclusions on his observation of 1,500 cases, and on a comparison with the results obtained by others: (1) That the harm alleged to have been caused by the conjunctival reaction depends without exception on the choice of unsuitable tuberculin preparations or on the neglect of important contraindications. (2) That the instillation, in diseased and especially in tuberculous eyes, in the scrofulous, particularly in those of youthful age, and a second time in the same eye, especially with strong solutions, is not permissible. (3) That the conjunctival reaction—undertaken with freshly-prepared solution—is absolutely free from danger, and is at present the simplest means of diagnosing a tuberculous focus, not recognizable by our other clinical methods of examination. The cases observed by Teichmann were all treated with 1 per cent. old tuberculin, and the majority showed only a mild conjunctivitis lasting three or four days. Isolated cases, however, occurred in which chemosis, follicular enlargement, purulent secretion, and subjective sensations of pressure and burning were present. These were limited to the conjunctiva, and disappeared in four to eight days, leaving no trace, and the eyes, after some further months of observation, still gave no sign of conjunctival irritation. Reactions which threaten to be severe are readily checked by the instillation of cocaine 2 per cent. and adrenalin 1 in 1,000. These marked reactions occur almost solely in cases where tuberculosis is clinically manifest, so that the test will not in future be used in such cases, but if it is used, a transient ophthalmia is better than the general disturbances which, in these same cases, would probably occur from the injection of tuberculin. Severe conjunctivitis of long duration, corneal ulcers, iritis, etc., described as having been occasioned by the conjunctival reaction, were in no case observed. Calmette's and Höchst's tuberculin are inconstant and much too strong. The author advises the use of Koch's old tuberculin in 1 per cent. or at most 2 per cent. solution. Any irritant condition of the urea is an absolute contraindication. Simple chronic conjunctivitis was never made worse, nor did any complication arise, but the test is difficult to determine in such cases. In the literature, harm resulted in no case (with a single unexplained exception) from any other cause than the omission of one or other of the above-mentioned precautions, which we have thus experimentally learnt to be necessary.

SURGERY.

116. Congenital Dislocation of the Hip.

M. Froelich (*Rev. d'Orthop.*, January 1st, 1909) says that at any age up to about 3 years congenital dislocation of the hip is a malformation which is curable by the manipulative method, and which does not require more than four or five months in the cure. At more advanced ages the treatment becomes proportionately difficult until we are met by cases which have passed the age for which these operations are curative. Here we still continue to fumble. There are three methods open to us for the relief of these cases, namely, the mechanical, the subtrochanteric osteotomy of Kirmisson, and the operative method of forcible abduction of Lorenz and Redard. The mechanical method has given very satisfactory results. It consists of some form of corset with a moulded pelvic piece and thigh piece which retain the leg in a position of abduction, which is the most favourable for fixing the head of the femur. The pelvi-trochanteric muscles shorten and the bone is firmly retained. It is necessary to add to the heel of the boot on the side of the shorter leg. Subtrochanteric osteotomy is indicated when the telescopic movement is large and progressive, when walking with the abducted leg is painful or when lordosis is pronounced. The chief objection to the method of forcible abduction under anaesthetics is the necessity which exists for wearing after operation for months or years a rigid apparatus of moulded leather or celluloid, in order to maintain abduction after rupture of the adductors, which without such apparatus is not maintained. The author gives short notes of 10 cases in which a modified operation had been done after a preliminary extension by weight and pulley. The children were aged 9 to 14; one case was bilateral, the remainder unilateral. There were 2 boys and 8 girls. Extension was used for periods between eight days and two months, with a weight not exceeding 25 kilograms. As a result of his experiences the author is of opinion that the age is not of such great importance as the degree of luxation. When the femoral head is more than 3 cm. displaced from the cotyloid cavity reduction should not be attempted. The state of the muscular system is of enormous importance. When well-developed it is better to abstain from interference, but when weak and small replacement is easy. Again, when the head of the femur is fixed and there is little up and down movement it is not well to interfere. When a weight of from 10 to 12 kilograms is not enough in eight days to bring down the head a distance of at least 1 cm. it is useless to prolong the traction. It will not be tolerated, and there is a danger of bringing about paralysis of the sciatic nerve. He concludes that a few cases which have passed the age limit for the bloodless operation are still benefited by a trial of the method of radical cure.

117. Thyrotomy for Tubercle of Larynx.

Schmiegelow (*Ugéskrift for Loeger*, February 4th, 1909) demonstrated before the Danish Oto-Laryngological Society a case of tuberculous disease of the larynx cured by thyrotomy. The patient, a woman aged 49, had been hoarse for about one year, with some cough and expectoration, but no wasting. Six months later a rough infiltration was discovered on the left superior vocal cord, the true vocal cord being fixed. A detached piece appeared, on microscopic examination, to be a typical specimen of flat-celled carcinoma. In the hospital symptoms of phthisis were discovered in both lungs. Thyrotomy was performed after a previous insertion of a Hahn's cannula, and both superior vocal cords were removed by scissors and knife. The inside of the thyroid cartilage was scraped with a sharp spoon, afterwards being sutured with catgut. The microscopic examination now showed typical tuberculous structure. The operation had been performed fourteen months previous to the patient being shown, and she had spent ten months in a sanatorium, where she had gained 17 lb. in weight. The larynx was now found to be scarred and somewhat stenosed circularly; everywhere the mucous membrane was free from tuberculous processes. Had the right diagnosis been made, the exhibitor would not have attempted a thyrotomy, as his previous experiences had shown that any larger operative interference in cases of laryngeal tuberculosis often produced a recrudescence of the lung tuberculosis. He had even lost some cases from acute miliary tuberculosis. It is possible that in this case the favourable result was obtained first by the energetic, complete removal of the tuberculous tissue and secondly by the primary closure of the larynx without tamponade and the simultaneous removal of the tracheal tube, thereby reducing the post-operative irritation to *nil*.

118. Post-operative Parotitis.

Marchetti (*Rif. Med.*, January 25th, 1909), owing to a recent experience of this condition in two cases (one after an operation for hernia, and the other after an ovariotomy), has given some attention to the subject. The rarity of such cases may be gauged from the fact that only 1 case has occurred out of 10,000 operations in the last ten years. The symptoms are the usual ones described in connexion with mumps, and the cases may be divided generally into three main groups: (1) A mild catarrhal type where the swelling and pain subside in about a week's time without suppuration (about 33 per cent). (2) A severe and often fatal type where extensive phlegmonous inflammation sets in, with necrosis of tissue, suppuration and probable loss of the gland, and salivary fistula (48 per cent.); this group requires free surgical treatment. (3) A small group (19 per cent.) where some suppuration occurs, but the pus makes its way out through Steno's duct. Adults, especially women (78 per cent.), are more frequently affected than children. Many theories to explain the onset of this particular form of parotitis have been put forward, and the author briefly discusses some of them, laying greater stress on the theory that it is due to exalted virulence in the oral flora, which in its turn is accentuated by the diminished activity of the parotid gland, due to fear, preoperative preparation (purge, altered diet, etc.), diminution in mastication, buccal manipulation by the anaesthetist. But, as the author points out, all these supposed causes are more or less prevalent in every operation, and yet post-operative parotitis is very rare; again, parotitis does not occur as the result of prolonged septic conditions of the mouth. He believes that the parotitis in question is merely post-operative in the chronological sense of the term, and not in any causal sense; that it is not scialogenic in origin, but most likely due to some unrecognized trauma.

OBSTETRICS.

119. Bacteria of Puerperal Uterus.

A. W. W. Lea and E. J. Sidebotham (*Journ. of Obstet. and Gynaec. of the Brit. Emp.*, January, 1909) review the present-day knowledge of the organisms found in the vaginal secretions and lochial discharges of pregnant and puerperal women, and give the results of their own investigations as to the bacteria present in the puerperal uterus, and especially as to whether virulent streptococci can in these cases be distinguished from non-virulent ones by the power of haemolysis which they possess. Observers of the organisms found in the vagina during a normal pregnancy have arrived at widely different results. Walthard gives the following list of organisms which have been found: (1) Facultative anaërobic streptococci of the type of *Streptococcus pyogenes puerperalis;* (2) facultative anaërobic diplo-streptococci; (3) anaërobic streptococci; (4) staphylococci of the type of *Staphylococcus albus;* (5) bacteria of the *coli* group; and in rare cases (6) *Bacillus funduliformis*, (7) pseudo-tetanus bacilli, (8) *Bacillus aërogenes capsulatus*. The vaginal portion of the cervix and even the lower part of the cervical canal contain many organisms which do not, however, appear to be able to penetrate the protective zone of the cervical secretion during pregnancy, and all observers are agreed that the cavity of the uterus during a normal pregnancy is free from organisms. During the puerperium a large number of organisms of apparently little virulence are present at the vulval orifice; the vagina is comparatively free during the first twenty-four hours, but later the organisms present during pregnancy multiply rapidly in the alkaline secretion; and, in spite of much difference of opinion, it must be concluded that organisms closely resembling those present in puerperal infection often exist in the upper part of the vagina and in the cervical secretion shortly after delivery, and that spontaneous ascent of the organisms into the uterine cavity is not infrequent. Schottmüller, who has for several years made a large number of observations, chiefly of organisms in the blood in cases of septicaemia, was the first to claim that the virulence of the organism varies with its haemolytic power, and he regards a haemolytic streptococcus as pathogenic. His conclusions have not been altogether confirmed by recent work, since many observers have shown that haemolysis may be produced by organisms of little virulence, although considerable evidence also exists to show that the organisms in severe puerperal infection always show a marked power of haemolysis. Lea and Sidebotham examined the lochial secretions in a series of 58 cases between the second and

ninth day after delivery, and found that organisms were present in the cervical canal cavity of the uterus in 80 per cent. of the cases. It was worthy of note that in 5 out of the 12 sterile cases no vaginal examination had been made during labour. The organisms were mainly those which have been shown to be present in the vaginal secretion during pregnancy; the authors find, however, that there is considerable evidence to show that organisms also ascend from without during the early days of the puerperium. In the great majority of the authors' series of cases the course of the puerperium was entirely uninfluenced by the presence of the organisms. In 20 per cent. of the cases streptococci were cultivated, and in 5 cases these showed marked power of haemolysis. In 4 of the cases in which haemolytic streptococci were demonstrated the puerperium was afebrile throughout; in the fifth case there was a superficial infection of the endometrium with febrile symptoms. The authors, therefore, arrive at the conclusion that the presence of haemolytic streptococci in the vaginal or uterine secretion cannot, in itself, be regarded as an indication of the existence of infection.

120. Grocco's Sign in Pregnancy.

SMITHIES (*Amer. Journ. of Med. Sci.*, October, 1908) records his observations upon 7 cases of pregnancy in which he investigated the value of the paravertebral triangle of dullness (Grocco's sign). The presence of paravertebral dullness in a case of an enormous multilocular cystadenoma suggested the possibility of the occurrence of similar areas of dullness in pregnancy. The patients were all primiparae ranging in age from 16 to 22 years. Five were pregnant between the eighth and tenth month, 1 was fifteen days overdue, and 1 was at the sixth month. A well-marked area of dullness along the spine to the left of the mid-vertebral line was demonstrable in all but 2 of the cases, and these areas were roughly triangular with more or less convex hypotenuses, but the areas were not so distinctly triangular as in cases of simple pleural effusion. The triangles varied in size according to posture, being generally larger with the patient lying on the left side. In 2 of the cases no paravertebral dullness was present, but as one of these was at the sixth month it would be of interest to note whether the sign developed later in the pregnancy. The presence of this paravertebral dullness appears to be due primarily to the abdominal tumour displacing other viscera upwards, and this, in combination with a displacement of the mediastinal tissues by an abnormal arching of the diaphragm whereby the lung may become temporarily moved away from the spine, affords a reasonable explanation of the symptom. In this connexion it is significant that, in the 2 cases referred to in which the sign was absent, in one the uterus had descended just before labour, and in the other the uterus had only reached the size of a six months pregnancy.

GYNAECOLOGY.

121. Retroflexion of the Uterus.

WHILE he realizes that retroflexion of the uterus can cause a number of very definite symptoms and may be the sole cause of a woman's trouble, Max Henkel (*Muench. med. Woch.*, January 26th, 1909) recognizes many cases in which no symptoms or discomfort are produced at all. In forming a diagnosis of retroflexion it is primarily necessary to distinguish the fixed form from the mobile form. The fixed form produces more frequent and severer symptoms than the mobile form, and it is rare for the appendages or pelvic cellular tissue to escape from inflammatory complications in the case of the former. Mobile retroflexion may be practically without symptoms which are noticed by the patient; but Henkel points out that the constitutional or virginal form is a frequent cause of sterility, and that this sterility may be at once removed when the uterus is placed in a proper anteflexion. Some obstetricians believe that the uterus is normally retroflected, but Henkel cannot conceive what reply can be given to the fact that a retroflected pregnant uterus becomes incarcerated unless the misplacement is corrected. He thinks that the gynaecologist should only determine whether sterility is caused by retroflexion by correcting the misplacement and watching whether pregnancy develops. Each case must be dealt with on its own merits. With regard to symptoms, he states that congenital retroflexion only rarely causes any at all, save when marked infantilism or sharp flexion is also present. In these cases the symptoms are those of dysmenorrhoea. The symptoms are not wholly or even chiefly due to the backward displacement, but can be better explained on the basis of the defective development of vessels, muscles, etc., and for this reason this form is frequently not much relieved by correcting the displacement. In distinguishing between mobile and fixed retroflexion, he advises Schultze's bimanual method and the uterine sound to replace the uterus. The former is only applicable when the abdominal walls are flaccid, so that the hand can be delved well behind the organ. At times it is wise to put the patient to sleep with chloroform for this purpose. This method is not well adapted to primiparae, whose abdominal muscles are rigid and vaginae narrow. The sound should be employed when the bimanual method fails or cannot be easily carried out, but it is necessary to exclude pregnancy and cervical catarrh first. Inflammation of the appendages also contraindicates the use of the sound. No force may be used in attempting to replace the uterus. The whole length of the sound lying within the uterus must touch the anterior wall of the uterus, but the point, which should not be sharp, should not reach quite to the fundus. When the uterus is replaced, provided that no inflammation of any neighbouring tissues is present, a ring pessary may be employed. He prefers Breuss's modification of the Thomas pessary, which has the same curve, but the hind portion is not so thick. Vulcanite, glass, or celluloid all form excellent pessaries. It is important that the pessary fit well—that is, that it is the smallest which keeps in place. In young individuals, however, he finds that pessary treatment should not be employed as a rule. The proper course is to perform the Alexander-Adams operation. He discusses the technique of the operation and some details in the after-treatment. When a mobile retroflexion is complicated with inflammatory conditions or with prolapse of the ovaries, he prefers to perform ventrifixation, and considers that Olshausen's operation is the best. When there is uterine prolapse, the best method is Schauta's vaginofixation. Details of these various procedures are given, but his accounts do not differ essentially from the accounts published in textbooks and elsewhere.

THERAPEUTICS.

122. Treatment of Syphilis by Atoxyl.

CHARMEIL, BERTIN, AND POITEAU (*L'Echo Méd. du Nord*, October 25th, 1908) have used atoxyl in the treatment of numerous cases of syphilitic disease, and a paper on the above subject gives the results obtained by them. With regard to the physiological properties of atoxyl, the authors point out that the drug is eliminated by the skin and especially by the kidneys, and in some case causes a transitory albuminuria. Elimination, however, is not always rapid, and, like mercury, the drug is liable to accumulate in the system. Koch, Hallopeau, etc., have shown that the drug possesses toxic properties, and its administration may cause headache, vertigo, deafness, fever, vesical tenesmus, retention of urine, and especially blindness. For these reasons it is prudent not to exceed 0.5 gram as a dose, and not to repeat the dose oftener than every other day. Further, it is wise not to continue the drug for more than ten days, then to allow an interval of fourteen days to elapse before entering on another ten days of treatment. When given subcutaneously or injected into the muscles (the two common modes of administration) the drug gives rise to no local disturbance. In many patients whom the authors have treated with atoxyl injections soon after the appearance of the primary chancre they have found that secondary symptoms of syphilis have appeared late, but that the disease has ultimately pursued its usual course. Out of 30 patients presenting various syphilitic manifestations which were treated by atoxyl injections by the authors, in all the general health appeared markedly improved; this, as the authors admit, may possibly have been due to a better condition of life and better hygienic surroundings of the patients whilst in hospital. On the actual syphilitic manifestations atoxyl appeared to have a very slow effect, and primary chancres remained stationary for a long time, in spite of atoxyl treatment. With regard to secondary syphilitic lesions, the authors found that mucous patches rapidly disappeared under atoxyl injections, whilst in other cases of secondary syphilis not very favourable results have been obtained. In tertiary syphilis arrest, and even slight retrogression, of the lesions have been observed; but a complete disappearance of tertiary lesions has never been observed even after long-continued treatment with atoxyl. In all cases in which atoxyl has had very little curative effect treatment by mercury has been

carried out, with the result that all symptoms have rapidly disappeared. As a result of their experiences with the use of atoxyl in the treatment of syphilis the authors conclude that mercury and iodide of potassium cannot be abandoned for atoxyl. They admit, however, that atoxyl has a certain curative effect, and that its employment may be of value in certain cases. However, in the authors' opinions, atoxyl will never become a specific for the treatment of syphilis; its effect in this disease is much inferior to that of mercury, and its toxic effects, especially on the visual apparatus, are greater than those which may result from mercurial treatment.

123. Treatment of Anthrax.

Barlach (*Med. Klin.*, November 1st, 1908) has had considerable experience in the treatment of anthrax at Neumünster, a seat of the leather industry. During 1872 to 1900, 10 cases were treated by him, all by the purely expectant method; of these 3 died. During 1900 to 1905, 9 cases were treated surgically. None of these died but recovery was slow. From 1905 to the present time, of 23 cases, treated according to the author's present method, none have died, and the period of treatment required has been short, while there have been no bad after-effects—for example, scars, etc. Barlach's method is as follows:—(1) Rest in bed in every case. This is absolute and rigidly enforced, since it is believed that movement favours the entrance of the bacilli into the blood stream. For the same reason all pressure on the pustule is carefully avoided. (2) In slight cases, fomentations of aluminium acetate or sublimate, the former especially when the pustule is on the face. The author considers cases slight when the disease has remained local, the pustule being situated on an area not markedly hardened, even if there is slight redness and swelling. (3) In severe cases the pustule is slit open, the pointed thermo-cautery is used in a ring of rather deep punctures close together, around the pustule, so that a groove results, and this groove hinders the passage of the bacilli from the pustule into the surrounding tissues. The numerous incisions formerly employed were not found to be necessary, and the author now only uses them when there is excessive tension from the oedema. Antiseptic fomentations are also used. In very severe cases, with marked oedema and severe erysipelas, Barlach finds injections of iodine to produce a surprisingly good effect. He injects one or two drops of the tincture at different points on the border of the erysipelas, about 5 to 10 cm. apart, using generally, in all, about 8 minims, or, in very extensive cases, up to 17 minims. This may be repeated, if necessary, in the following days. The author states, in passing, that he has found this iodine injection excellent in cases of ordinary erysipelas, especially of the wandering type. Small abscesses occasionally form at the site of the injection. Camphor injections are also given in severe cases when indicated.

124. Hypnotic Suggestion in Nervous Pain.

Delius (*Med. Klin.*, December 27th, 1908) explains how it is possible to remove so-called nervous pains or psychoses by psychical means. The sensation of pain is brought about by a nervous excitation of the neurons in the cerebral cortex (to which the stimuli from the periphery reach) awakening in us the consciousness of pain. Such a neuron-exciting process is called "neurokym" or nerve waves. Stimuli must be sufficiently intense as well as extensive in order to pass beyond the so-called "stimulus threshold." The height of this varies in different people, in the same people at different times, and at the same time in different groups of cells of the cerebral cortex, which may be in varying conditions of excitability. Modern psychology supposes that it is the ganglion cells of the cortex of the brain—that is, the neurons—which the sensory stimulus reaches, and in which at the same time the remembrance of the stimulus is stored up as a recollected image, a conception. If a neuron receives a similar sensory stimulus often, or if the consciousness of the neuron is frequently awakened through association, then the recollected image will become clearer and sharper with practice, and, in future, an ever-decreasing stimulus will be sufficient to awaken the recollected image—that is, the stimulus threshold becomes ever lower. Since the conception is only the impression of the sensation, and differs only quantitatively, not qualitatively, from the sensation, it is clear that a conception may exist through associative stimulation, if the nerve waves are only strong enough to lead to sensation. This is called hallucination. Hysteria may be the result of the persistence of hyperexcitability of certain neurons after the disappearance of an organic cause. It is often a case more of primary overstimulation of the neurons combined with a prohibition of restraint, the state of mind playing an important part. The emotional idea of a diseased condition is by itself sufficient to produce the latter. Nervous pains are due to illusions and true hallucinations rather than true sensation, and therefore can be removed by psychical measures. It is a case of illusion when peripheral sensory stimuli, which ordinarily cause no painful or no sensation at all, are interpreted by over-excitable centres as pain. Delius has successfully treated facial and brachial neuralgias, sciatica, cardiac pain, and migraine by psycho-therapeutic measures. In a case of trigeminal neuralgia, first right, then left, or always symmetrical, one should first think of a psychalgia. Signs of neurasthenia or hysteria will also be present. Delius dealt successfully with 60 cases of disturbed menstruation by hypnotic suggestion; the pain during a period ceased or became much less, in cases where the flow previously lasted too long the duration was shortened, excessive loss was reduced, and the onset of menstruation brought about earlier or later as required. Suggestion may prevent the consciousness of pain even of organic nature, and Delius twice brought about a practically painless confinement, but pain of organic origin cannot be removed for long. Delius concludes that anomalies of menstruation are largely due to the co-operation of cerebral causes. Perfectly healthy women have practically no pain during the period. Local inflammation causes pain, and, owing to the monthly recurrence of the period, such a condition of over-excitability of the neurons may be gradually brought about, fear playing an important part; finally, even after healing of the local affection, the normal flow may overstep the stimulus threshold, and call forth consciousness in the form of pain; and, on the other hand, it may produce further nervous paths which lead to an abnormally severe flow. In hypnotic treatment by suggestion, the over-excitability of the affected system of neurons is lowered, and thus their stimulus threshold raised, so that in future neither stimuli reaching them from the periphery nor the association of sensations connected with the idea of the disease will be in a position to produce painful signs of consciousness. One will then try by direct suggestion to bring about a momentary prohibition of perception, success varying with the suggestibility of the patient and depth of the hypnosis. Through the removal of pain by suggestion, the distrust of the patient disappears, and more powerful association channels in a better direction are produced. The more powerfully these innervation waves incite in the direction of healing the sooner are they in a position to prohibit the over-excitability of the diseased neurons maintained by fright. If one explains to the patient that precisely the anxious consideration of his condition is harmful, his conception and the impulse of his will in the right direction will help to strengthen the recovery. Delius maintains that one should desist from the use of hypnotism in all such suitable cases only when it cannot be attained, instead of reserving it for cases which defy every other therapeutic measure.

PATHOLOGY.

125. The Blood in Gonorrhoea.

Sarra (*Gazz. degli Osped.*, No. 104, 1908), in view of the well-known clinical aspect (fever, pallor, general malaise, etc.) often associated with acute gonorrhoea, has carried out certain researches on the state of the blood in this condition. His conclusions are as follows: (1) In the early days of acute anterior urethritis the red corpuscles and the haemoglobin vary within limits that may be considered normal, but when the whole urethra is affected there arise signs of slight anaemia (diminution in the haemoglobin and number of red corpuscles). (2) More marked changes are seen in the white corpuscles, which tend to reach figures above the normal, and if the urethritis is total, and especially if there are complications, a definite hyperleucocytosis is present. (3) This hyperleucocytosis is almost entirely made up of polynucleated neutrophile cells. If these descend to the normal or below, then there is a larger number of eosinophiles. (4) The eosinophiles in anterior urethritis vary within normal limits; in total urethritis they are increased in number, and that may occur either at the acme of the disease or during defervescence. (5) In chronic urethritis the blood formula varies within the normal limits. These facts confirm the clinical view that during the acute stage of gonorrhoea there is a certain amount of general infection.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

126. Haemorrhagic Purpura.

LENOBLE reports the following case (*Arch. des Mal. du Cœur, des Vaisseaux et du Sang*, August, 1908): A painter, aged 16, was admitted to hospital on May 4th, 1908. About one month previously he had fallen on to his back, and a few days later complained of pain over the region of the kidneys. Ten days after the fall he suffered from violent pains in the abdomen and legs, and the following day vomiting and severe diarrhoea set in, the stools containing blood. Repeated attacks of epistaxis occurred, together with bleeding from the gums. The patient was feverish and delirious. Red spots then appeared on the arms and legs, and the abdomen became distended and painful to palpation. On the fifteenth day following the accident the patient passed bloody urine. When admitted to hospital he was found to be a well-developed man; the mucous membranes were of a good colour and the skin slightly icteric; the abdomen was distended and painful; there was no oedema of the limbs. On percussion, there was slight dullness found in the flanks, the rest of the abdomen being tympanitic. The tongue was pale, the appetite very bad; vomiting had stopped, but diarrhoea still persisted, although no blood was seen in the stools. Heart and lungs were healthy. The urine was of a deep red colour. On rectal examination there was to be felt behind the bladder a hard mass. Slight attacks of epistaxis occurred from time to time. On May 20th a confluent purpuric eruption appeared on both forearms and both legs. From this time the abdomen ceased to be painful, but signs of ascites appeared. Diarrhoea ceased and the stools became of a putty colour. Signs of fluid in each pleural cavity at this time occurred. By June 1st the purpuric eruption was clearing up, but the ascites was increasing and oedema of the legs and scrotum appeared. On June 5th a fresh attack of purpura occurred; this, however, had completely disappeared by the 11th; the urine contained a large quantity of albumen and, on centrifugalization, red cells. The examination of the blood on May 29th showed well-coloured red cells and numerous haematoblasts; the white cells were abundant. The coagulation time of the serum was ten minutes. The serum was alkaline in reaction and did not give a positive Gmelin reaction. A differential count of white cells showed the following: Polynuclears, 71.2 per cent.; lymphocytes, 23.3 per cent.; mononuclears, 3.3 per cent.; eosinophiles, 0.4 per cent.; mast cells, 0.1 per cent.; transitional forms, 1.7 per cent.; no myelocytes. The red cells exhibited neither poikilocytosis nor polychromatophilia, and no nucleated red cells were seen. On June 5th the red cells numbered 3,162,000, the white 10,380, and large numbers of haematoblasts were present. There were no nucleated reds. The differential count of white cells gave much the same result as on the first occasion.

127. Muscular Rheumatism.

EMIL SCHWARZ (*Zentralbl. f. die gesamte Therap.*, October, 1908) deals with the subject of muscular pains under three headings: (1) Muscular pain due to affections of the muscles which are preceded by some pathological process in the nervous system, as, for example, the pain of the cramps which are an expression of the alcoholic diathesis; (2) muscle pain accompanied by anatomical changes in the muscles, as in purulent or haemorrhagic acute polymyositis, or in the acute simple or rheumatic polymyositis, the symptoms of which are high fever and severe muscular pain; (3) pain not accompanied by any obvious pathological anatomical change in the muscles. Cases belonging to the third group are those frequently met with, and, since within the group are included many different conditions whose common characteristic is the muscular pain, the author would prefer to give to them the name "myalgia" rather than the more pretentious ordinary name of "muscular rheumatism." The diagnosis of myalgia needs considerable care: it is not enough that spots painful on pressure should be found on the muscle, but the body of the muscle must be painful in its whole extent. Where the muscles of the trunk are in question it is not always easy to differentiate hyperaesthesia of the skin from myalgia. In connexion with rheumatic torticollis and lumbago, Schwarz puts forward the views of Erben. Erben finds that in rheumatic torticollis the pain is on the convex, not on the concave, side of the neck, and he considers it to be caused by the distortion of the cervical spine, and thus to be a joint affection rather than true myalgia; similarly lumbago, according to Erben, is either a neuralgia or caused by an acute distortion of the joints; the author is unable to agree with this explanation of lumbago in all cases, because of the permanent benefit which he has often seen result in lumbago from the application of strong faradic currents. Abdominal myalgia is often the cause of a mistake in diagnosis; in one case which came under the author's notice myalgia was diagnosed as cholelithiasis, while in another the patient was treated for myalgia, but died of perforation of an ulcus ventriculi. In testing for abdominal myalgia the author's practice is to put his hand upon the rectus muscle while the patient is lying down; the patient then sits up, the muscle contracts almost against the investigating hand, and in cases of myalgia there is acute pain. Errors may still arise, either because the muscular contraction has an irritating action upon the deeper lying muscles, as is perhaps the case in abdominal colic, or because hyperaesthesia of the skin may occur, as in appendicitis or cholelithiasis. The diagnosis of other forms of muscular rheumatism is also considered. Finally, Schwarz points out that the pain of myalgia is not always most severe after movement, but is very often worse at night in bed. Women at the time of the climacteric are very subject to nightly exacerbations of myalgia, often accompanied by acroparaesthesias of the fingers and legs; the association of symptoms suggests the possibilty that the seat of the disease is not in the muscles, but that the muscular pain depends upon an abnormal nervous and vasomotor condition.

128. The Ophthalmo-reaction to Tuberculin.

A COMMUNICATION on the ophthalmo-reaction, which was intended for the meeting of the German scientists and physicians at Cologne, but which the author, A. Wolff-Eisner, was prevented from delivering there, was read at the Tuberculosis Congress at Washington, and is published in the *Muench. med. Woch.*, November 10th, 1908. With regard to the subcutaneous application of Koch's tuberculin, Wolff-Eisner states that while a positive reaction obtained by its means indicates the presence of tuberculosis, it by no means indicates that the disease is active. Positive reactions have been obtained in from 50 to 80 per cent. of persons who were apparently healthy. The cutaneous reaction seems to correspond fairly exactly. It is a handy and safe method of applying tuberculin for diagnostic purposes, but it discovers inactive and latent tuberculosis as well as clinically manifest tuberculosis. The conjunctival reaction, on the other hand, is capable of determining an active form of disease. It is positive in active tuberculosis, save in advanced stages. Healthy persons are said not to react to it, some apparently healthy persons react, and have been shown later to have been tuberculous; and, further, that some 5 to 8 per cent. have shown a positive reaction, but the future may show that they, too, were tuberculous. From this he concludes that apparently healthy persons who show a positive ophthalmo-reaction to tuberculin should be suspected of tuberculosis. The value of the reaction lies in the positive responses; negative results do not exclude active tuberculosis. It is, in his opinion, not a focal reaction, and in this fact its safety lies. The danger of a general reaction does not lie in the rise of temperature which manifests it, but in the fact that tuberculous foci respond to the introduction of the tuberculin. If the contraindications of the ophthalmo-reaction are strictly adhered to, there is no risk attaching to its employment. These include the avoidance of applying the tuberculin to an eye affected with tuberculosis, and of repeating the test in the same eye. Concentrated preparations should not be used. The author uses a special tuberculin, called "Ruete-Enoch," in from 1 to 2 per cent. solution. He complains that ophthalmologists, who are in a specially good position to determine the value of the test, habitually neglected these contraindications. It has been stated that the reaction is unreliable. Wolff-Eisner states that those who say this are not good clinicians. Negative reactions in obvious cases of tuberculosis are indications of a bad prognosis, but the reverse does not hold good. Further, he considers that progress can be materially

assisted by a comparison of the ophthalmo and cutaneous reactions. In comparing the reaction with opsonin as a diagnostic and prognostic means, he has come to the conclusion that in spite of the vary laborious technique involved in determining the opsonic index, this does not yield more information than does the ophthalmo-reaction. He states that his opsonin experiments, and also his experiments with complement deflection, have proved that tubercle toxin, corresponding in every way with tuberculin, is absorbed by every tuberculous patient. This means that an injection or other application of tuberculin cannot do more than the progress of the disease can do, and that when a patient has reacted to an application of tuberculin, it is open to the observer to ascribe the changes in the tuberculous foci either to the artificially-introduced tuberculin or to the tuberculin produced in the disease focus itself. He believes that various tissues are capable of producing receptors which combine the tuberculin, and thus localize the toxic action. This idea has a practical importance, inasmuch as it is possible to produce the receptors in connective tissue or in the skin by means of tuberculin injections or inunctions, which may attract the tuberculin produced in the pulmonary foci to itself.

SURGERY.

129. Intestinal Surgery.

THE fifth *Bulletin of Research Work* in the Division of Surgery of the Medical School of Harvard University, published in December, 1908, contains four reports of experimental work on novel questions in intestinal surgery. Cannon and Murphy, in a paper on The Movements of the Stomach and Intestines in some Surgical Conditions, give the results of fluoroscopic observations made after operations on these viscera by means of the Roentgen rays. It is stated that after high intestinal section and suture gastric peristalsis is not interfered with. For about six hours after the operation the pylorus remains tightly closed against the peristaltic pressure of the stomach, and does not permit food to pass into wounded gut. There is a striking coincidence, the authors believe, between the duration of the delay of the discharge from the stomach and the period of the primary cementing of the intestinal wounds. After end-to-end suture of severed intestine no inefficiency of the gut at the seat of suture was observed, but after lateral anastomosis, on the other hand, there was always an accumulation of food in the chamber formed by the apposed loops. From this latter result, which is attributed to prolonged failure of co-ordination of the divided circular muscles, it is concluded that lateral anastomosis is not so ideal an operation as end-to-end union. In cases of intestinal obstruction the food, it was found, leaves the stomach without delay, and, after accumulation and subjection to turbulent movements of peristalsis at the seat of the obstruction, is swiftly returned to the stomach. After thrombosis and embolism there is usually no movement of either stomach or intestine, the food lying quiet in the former viscus until discharged by vomiting. Post-operative paralysis of the alimentary canal is due, it is held, but in a slight degree to prolonged etherization, and to exposure and chilling of the gut. The delay in the passage of food was found most marked after handling of the digestive organs, which, even when gentle, was followed by a temporary arrest of the movements of the stomach. In his conclusions from a Clinical and Experimental Study of the Use of Sterile Oil for the Prevention of Intraperitoneal Adhesions, Blake holds that it is fair to assume that olive oil, absolutely sterile, may be used in the peritoneal cavity of patients in moderate quantities (1 to 4 drachms) without danger, general or local; that it remains in the cavity for periods varying from five to fifteen days and possibly even longer; that its presence tends to prevent early and direct adhesion of denuded or inflamed peritoneal surfaces, and, therefore, that its use under certain precautions is indicated as being moderately effective in sometimes preventing and usually diminishing the formation of post-operative peritoneal adhesions. The author states that special care must be taken in sterilizing the oil, which is not done by some methods in common use, and mentions that in two of his clinical observations very unpleasant symptoms occurred. It seems probable, moreover, that this method would not be free from the danger of fatty embolism. In a paper by Monks on Flushing the Intestinal Canal with Salt Solution through Multiple Enterotomy Openings, the author concludes, from experiments on animals and the human cadaver, and also from the favourable results obtained in one case of grave streptococcic peritonitis, that this procedure is likely to have in certain cases a distinct sphere of usefulness. It is argued that when a patient's life is in danger from acute intestinal poisoning associated with much distension of the bowels, and the time has passed when ordinary methods are likely to be of any use, there is a fair possibility that the immediate removal through enterotomy openings of a part of the intestinal contents, and flushing the intestinal canal with a quantity of warm saline solution from one opening to another, may turn the scale in favour of the patient and save life. The following suggestions are made on the technique of this procedure: A loop of bowel is picked up high in a median laparotomy wound made from the pubes up to or above the umbilicus. The upper and lower ends of the loop having been determined by reference to the root of the mesentery, a small opening is made in the loop. After a free escape of gas and faeces a small glass tube is inserted through the enterotomy opening and directed downwards towards the ileo-caecal valve. Some of the intestinal loops below the opening are now gently distended by warm saline solution. If nothing more than this can be done, the substitution in the bowel of the warm salt solution in place of the gas and faeces that have escaped will, the author thinks, presumably help the patient. If the patient's condition will allow it, a second opening should now be made in the loop which is apparently the lowest of those distended. A glass tube is passed through this and the portion of intestine between the two thoroughly washed out, until the solution running away through the tubes is quite clear. The first enterotomy wound is next cleansed and sutured, and the portion of intestine that has been washed out returned into the abdominal cavity. This procedure is repeated on the lower bowel, unless further action is prevented by the patient's condition. Finally, if the condition permits, the colon is filled with the saline solution from the lowest opening in the small intestine, and a tube is introduced into the rectum to remove any of the solution or of intestinal contents that may reach the lower bowel. In the final paper on intestinal surgery, Scudder states that he has undertaken laboratory experiments in order to determine the behaviour of the bowel after it has been deprived of its mesentery and the omentum has been used to take the place of the mesenteric blood supply. The results of his own, together with those of other investigators, have led him to regard this procedure of omentopexy to a portion of bowel detached from its mesentery as of very limited usefulness in human intestinal surgery. Resection and anastomosis of the bowel remain the procedures to be adopted to the conditions following a removal, accidental or intentional, of the mesentery from the bowel. It is conceivable, however, that an omentopexy, especially if made to either side of the denuded area, might prevent necrosis if a limited portion of intestine (2 or 3 cm.) were deprived of its mesentery.

130. Laryngeal Cyst.

KLEIN (*Ugeskrift for Laeger*, February 4th, 1909) reports an unusual case of laryngeal cyst. The patient was 74 years old, and had suffered from increasing hoarseness for about nine months, and during the last month from nocturnal suffocation symptoms. The voice was alternately toneless and rough and vibrating. The laryngeal mucous membrane was diffusely red and so much swollen anteriorly as to hide the vocal cords, which posteriorly were greyish-white and fully movable on inspiration. During phonation they were separated for a considerable distance, as a smooth tumour, seemingly of the size of a bean, was pressing upwards, filling the anterior two-thirds of the laryngeal aperture. Its exact position could not be determined on account of the swollen condition of the mucous membrane. It was easily removed by the endo-laryngeal method under cocaine-adrenalin anaesthesia after Parker's method, by means of the cold snare, some force being necessary. The tumour was smooth, sausage-shaped, 2½ cm. long and 1 cm. in section. Its stalk was found to have been attached to the anterior third of the right superior vocal cord. It had thus been hanging down into the rima glottidis, so that only its tip was visible on strong expiration. The microscopic examination showed that its distal rounded part contained a cyst filled with serous fluid, its wall consisting of connective tissue sparsely infiltrated with cells, this tissue being directly continuous with that of the mucous membrane, and its free surface was continuously covered with similar surface epithelium. The cyst appears to have arisen by retention in one of the glands of the mucous membrane affected with chronic catarrh. Laryngeal cysts are most common round the lig. glosso-epiglottica, and are as a rule broad-based. The author has not found any similar case of stalked laryngeal cyst reported.

OBSTETRICS.

131. Dystocia from Circular Vaginal Septum.

LEPAGE (*Comptes Rendus de la Soc. d'Obstét. de Gynéc. et de Pédiatr. de Paris*, November, 1908) attended a labour where the first stage was obstructed by a diaphragm placed transversely in the vagina. The patient was a primipara, aged 18, the last period occurred in the middle of September, 1907. In the middle of the eighth month Lepage was consulted by her doctor. The vagina was tender and an anaesthetic had to be given before the parts could be examined properly. The hymen, lacerated, was partly persistent. Above, half-way up the vagina, some white cystic bodies, each of the size of a haricot bean, were discovered and laid open; they were thin-walled and contained sebaceous matter. Immediately superior to these cysts was a well-developed transverse diaphragm, thickest posteriorly. There was a small central orifice into which some cystic bodies, like those below the septum, projected. The cervix with the fetal head presenting, could be plainly defined. Thirteen days later, on June 24th, 1908, labour pains began at 8 a.m. By 11.40 p.m. dilatation of the cervix and of the vaginal diaphragm was complete, and one hour later a live female fetus over 6¾ lb. in weight was delivered spontaneously. By July 23rd the diaphragm was represented by a cicatricial ring hardly constituting a stricture; it lay 1½ in. above the vulva. The cervix was free from any bands running across its fornices. The transverse vaginal septum is a condition normal in some of the lower mammalia. When it complicates labour the fetal head generally dilates and tears the septum without the aid of obstetric art. Pinard, in discussing Lepage's case, observed that he had seen a great number of instances of circular transverse vaginal diaphragms obstructing labour, but in no instance did he find it necessary to intervene. When there was a longitudinal vaginal septum, the presenting head usually pushed it aside; but in a breech presentation the legs of the fetus tended to get astride the upper border of the septum. On that account Pinard always applied two forceps to the septum and divided it between them.

132. Alsol in Gynaecology and Obstetrics.

PINNER AND SIEGERT (*Med. Klin.*, December 27th, 1908) recommend aluminium-aceto-tartrate (which the firm Athenstoedt and Redeker have called alsol) as an antiseptic which (1) is non-poisonous, (2) does not corrode, (3) does not stain linen, (4) is transparent, (5) does not smell disagreeably, (6) has no action on indiarubber tubes. It is prepared by dissolving 2½ parts of basic aluminium acetate with 1 part of tartaric acid in water, filtering and evaporating to dryness. Colourless, shiny, gummy lumps are obtained, which smell faintly of acetic acid, and, when diluted with water, give a colourless mass of the consistence of syrup. The statement that alsol is non-corrosive refers only to the diluted solution in which it is commonly given to patients. When concentrated it is highly astringent and corrosive, and may be used instead of Paquelin's cautery. It is excellent in the treatment of erosion of any kind and ectropion, and is useful for douching the vagina during treatment by pessaries and as an after-cure in acute gonorrhoea. As an intrauterine douche after curetting following abortion, it causes immediate contraction of the uterine muscle, and is very useful in chronic parametritis and specially painful chronic forms of pelvic peritonitis. It may be heated to at least 60° C. without decomposing, and will disinfect instruments and apparatus. Alsol dusting powder is excellent for powdering the hands before a gynaecological examination; thus a discharge may be diagnosed by digital examination alone, which is not possible when a fatty or oily material has been used. By experiments with anthrax and Neisser's gonococcus, etc., Aufrecht showed that the disinfecting power of alsol is more than twice as great as that of liquor aluminii acetatis and very slightly greater than that of carbolic acid.

GYNAECOLOGY.

133. Congenital Diaphragmatic Hernia.

SCHREIDER (*L'Obstét.*, August, 1908) attended a woman who was delivered of a female child spontaneously. The infant cried once and then turned blue; the pulsations of the heart were perceptible on the right side of the thorax. The child died, and radiography was undertaken at once. A left diaphragmatic hernia was discovered. Schreider inquired about the family history. The mother's firs pregnancy was gemellar. A boy and girl were born the former had a right inguinal hernia. Two years later a daughter was born, who also had a right inguinal hernia. At the end of four years a boy was born with umbilical hernia and ectopia of the abdominal viscera. Lastly came the girl with diaphragmatic hernia. The mother's father was subject to double inguinal hernia, and had a twin sister. The mother had six brothers and four sisters all in good health, but two of the sisters had undergone operation, the one for single, the other for double, hernia, the variety not being specified. The mother's father, mother, sisters, and three out of her six brothers were all subject to varicose veins, an interesting fact, Schreider remarks, in association with the tendency to weakness of the abdominal walls so marked in her relations.

THERAPEUTICS.

134. Treatment of Bronchial Asthma.

SUCCESS in the treatment of bronchial asthma depends on a proper estimation of the condition. The treatment necessarily falls under two heads: That of the acute attack and that of the "disposition." G. Treupel (*Deut. med. Woch.*, December 31st, 1908) first discusses those processes which lead up to an acute attack. The chief symptoms are air hunger, spasmodically prolonged expiration, and frequently a feeling of pressure on the chest, which may amount to actual pain. There may be some pressure symptoms heralding the attack. Fear is associated with the attack. Physical examination reveals loud sibilant râles; the auxiliary muscles are used for respiration, and the expiration is laboured and slow. The heart and pulse are remarkably little affected. The lungs are found to be in a condition of over-distension. Towards the end of the attack there is usually some thick, mucous sputum. When this is got rid of, a freer type of breathing takes place. The patient usually feels well between the attacks, and capable of undertaking exerting work. The causes of the attack are: First, a narrowing of the finer bronchial tubes, and secondly, a secretion of mucus in response to dilatation of blood vessels in the bronchi. The former is a muscular spasm, which depends on some irritation of the vagus, and the second is due to vasomotor changes. It thus appears that both determining causes act through the nervous system. Pressure on the vagus is capable of calling forth an attack of asthma (for example, by a tumour). It has been found experimentally that an asthmatic attack produced by irritation of the vagus can be stopped by paralysing the nerve endings with atropine; ½ to 1 mg. of atropine injected subcutaneously stops the stormiest symptoms of an attack in from ten to twelve minutes. The old burning powders contained atropine. The action of Tucker's secret remedy depends largely on this drug. Treupel calls attention to the analyses of this preparation, and medical practitioners will do well to write their own prescriptions according to the one or other formula. Einhorn's analysis was:

Cocaine nitrite	1.0 per cent.
Atropine nitrite	0.6 ,,
Glycerine	32.2 ,,
Water	66.2 ,,

The percentages are approximate.

Bertram's analysis was:

Atropine sulphate...	0.15 gram
Sodii nitrosi	0.60 gram
Glycerine...	2.00 grams
Aquae	15.00 grams

If the solution prepared according to the analysis of Bertram is sprayed for three minutes, from ½ to 1 mg. of atropine will be absorbed from the tracheal mucosa. Ritsert's inhalation fluid contains anaesthesin, atropine, belladonna, saltpetre, and stramonium. This is known as *eupnema*. Trousseau introduced a preventive method of treatment by giving a pill containing ¼ mg. of atropine daily, and increasing the dose by ¼ mg. every second or third day until 4 mg. were reached. The treatment was continued for four weeks. Morphine also does good in the acute attack. The dose must not be less than 1 cg. This can with advantage be associated with ¼ mg. of atropine; 2 grams of chloral hydrate also works well. Next the author turns his attention to the reflex neuroses, and especially those originating in the digestive organs, sexual organs, and nose. It is naturally necessary to remove the cause of irritation, whenever this is possible. When the attack is due to the reflex action of certain

forms of dust or volatile substances acting through the nasal mucous membrane the latter should be cocainized. The asthmatic is usually very dependent on psychic influences. The remembrance of circumstances accompanying a previous attack may give rise to a renewal of the malady, when these circumstances are repeated. Fear and other forms of nervous disturbances, especially at night time, predispose to an attack. The fear of choking often leads to a wrong irregular form of breathing, and it is quite possible to produce an attack willingly by imitating this form of respiration. Treatment which influences the fear of choking and which regulates the respiration is of importance. The author goes into some detail with regard to the psychical treatment of asthmatics. Lung gymnastics, either by means of the Swedish system or by special apparatus, require to be employed in certain cases. The effect of climate is also important. In some cases sea or mountain air permanently cures. The catarrh connected with asthma is best dealt with by means of sweating, either with iodides or without. Electric-light baths form the best method of applying the sweat-producing agent. A handy form has recently been introduced which permits of the bath being given in bed under a cradle. In conclusion, Treupel states that the treatment of asthma is a grateful field for the practitioner, but is by no means an easy one. It depends largely on the knowledge and capabilities of the practitioner and on his will and perseverance.

135. Cutaneous Tuberculin Reaction in Infants.

ELLENBECK (*Mediz. Klin.*, October 18th, 1908) had 232 infants in the Dresden Home for Infants vaccinated cutaneously with tuberculin in the way Pirquet recommended, regardless of the disease present, to show whether the cutaneous test proved always negative in non-tuberculous children, and positive in the tuberculous. The practical results show that: (1) The cutaneous reaction is a valuable aid in the diagnosis of tuberculosis in infants, since it is harmless, simple, and trustworthy. (2) A positive reaction is often the first sign of incipient tuberculosis, and can therefore increase our knowledge of the course of tuberculosis in infants. (3) A reaction is only to be counted as positive when a distinct red papule forms; doubtful reactions are to be included as negative. (4) The negative reaction is often of great significance; a negative result of the cutaneous test is only to be held of value after several repetitions at suitable intervals (fourteen days). (5) A positive reaction occurred 5 times amongst the 232 unselected infants vaccinated, and showed that tuberculosis of infants, even in previously thriving children, offers a bad prognosis. The author gives notes of the tuberculous 6 cases in which the Pirquet treatment was tried, 5 proving positive and 1 negative. In 1 case the patient was 3½ months old, mother tuberculous, infant artificially fed since fourteenth day. January 19th: Condition—weakly, badly nourished child; skin, greyish-white; anxious expression, restless; respirations accelerated and deepened left lung, posteriorly and below; prolonged and heightened expirations; no fever. January 20th: Result of yesterday's cutaneous reaction strongly positive; around the vaccinated spot near the elbow an area has formed, larger than a 3-mark piece, of papules, the size of a pin's head, thickly set on a red ground. January 21st: Death following convulsions. Section: Caseous bronchial glands; fresh crop of fairly numerous tubercles in lungs, liver, and spleen; mesenteric glands not noticeably swollen.

136. Endovenous Injections of Corrosive Sublimate in Acute Rheumatism.

OSTALI (*Gazz. degli Osped.*, August 16th, 1908) records three cases of acute polyarticular rheumatism which, after proving rebellious to salicylate treatment, improved quickly under endovenous injections of corrosive sublimate. The first case was that of a man aged 22, admitted on February 21st with acute rheumatism (feet, knees, and ankles). Sod. salicyl. and caffeine were given, salicylic packs applied to the joints; after about a week of this treatment, no benefit being observed, on March 2nd an endovenous injection of 5 mg. of sublimate was given; the next two days the patient was much better, pains relieved, and temperature lower. On March 4th a slight relapse occurred, and another injection of 5 mg. was given. March 9th, 10 mg. were given. After this no further treatment was required, and the patient was discharged cured. The other two cases (aged 29 and 52) derived similar benefit. In the second case the patient became apyretic the day after the first injection, and remained so. No ill effects were observed.

PATHOLOGY.

137. Experimental Reduction of Kidney Substance.

PEARCE (*Journ. of Exper. Med.*, September, 1908) finds that removal of one-half, two-thirds, and sometimes three-quarters of the kidney substance in the dog causes no change in the general nitrogenous metabolism as determined by estimations of the total nitrogen, urea, and ammonia eliminated by the urine. The removal of larger amounts, and sometimes of three-quarters of the substance, leads to the condition of metabolism associated with starvation. This, however, is apparently the result of the gastro-intestinal disturbance constantly associated with extensive kidney reduction, and not of a disturbance of general nitrogenous metabolism. The determination of the amount of faecal nitrogen indicates that the gastro-intestinal disturbance is not due to diminished absorption; and only in one experiment was there evidence of its being due to an increased elimination of nitrogenous substance into the intestine. Pearce argues that the results of his experiments are against the theory that the kidney furnishes an internal secretion which has an important influence on general nitrogenous metabolism. At least, if such a function exists, it is not disturbed by the removal of three-fourths of the kidney substance.—Sampson and Pearce (*Journ. of Exper. Med.*, November, 1908), in a further research on experimental reduction of the kidney substance, find that the immediate effect of the operation on the portion of the kidney remaining is an infarction of the tissue compressed by the sutures. The area of necrosis extends only a short distance into the adjacent kidney tissue. The infarction gradually becomes replaced by fibrous tissue, and in three to four weeks' time the necrotic tissue entirely disappears. The amount of fibrous tissue in time becomes so slight and the healing so perfect, that it is difficult to detect the site of the operation. The renal elements sometimes persist in the infarcted area, and the glomeruli apparently are more resistant than the tubules. The tubules in this area sometimes become calcified, and bone formation beneath the epithelium of the pelvis is also of frequent occurrence. The pelvic epithelium usually shows marked proliferation, and may invade the field of operation in alveolar masses. In two experiments removal of approximately half of one kidney did not alter either the remaining portion of that kidney or the size of the opposite kidney; these experiments were terminated on the thirty-fourth and forty-seventh days. In another experiment, terminated in twenty-one days, there was a slight but definite atrophy of the remaining tissue of the kidney operated upon. In six experiments in which one kidney was removed and approximately half of the other, three of the animals died as a result of the operation on the sixth, seventh, and tenth days. The probable cause of death was renal insufficiency. The animals refused food, vomited persistently, and lost strength and weight. The other three animals recovered, and were killed at periods varying from five to eight weeks.

138. Complement Fixation in Mothers of Syphilitic Infants.

KNOEPFELMACHER AND LEHNDORFF (*Mediz. Klinik*, August 2nd, 1908) think it highly probable that the mothers of syphilitic infants have, as a rule, had syphilis themselves. This belief is based on their observations of 45 women, the mothers of children admitted into hospital for hereditary syphilis. Of those mothers who showed no signs and gave no history of syphilis (32) reaction was positive in 18 (56.2 per cent.). Of those who had had syphilis (13) 8 gave a positive reaction (61.5 per cent.). The proportion is thus seen to be about the same in the two groups. Taking all mothers of hereditary syphilitic infants together, 57 per cent. gave a positive reaction, and as recent observers state that in cases of latent syphilis a positive reaction is to be expected in 50 per cent., almost the same proportion, the authors take this to indicate that the mothers have really had syphilis themselves. The theory that the reaction products which produce complement fixation have been absorbed by the mother from the fetus, through the placenta, without the mother herself suffering from the disease, is discarded, because in many of the authors' cases the mothers had borne syphilitic children a good number of years previously, and yet showed complement fixation. That this could occur without the mother herself having suffered from the disease is a theory not upheld by analogy with any other infectious disease. A comparison between the results obtained by Wassermann's test in mother and child is promised when observations have been instituted in a larger number of cases than at present.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

139. The Results of Cerebro-spinal Meningitis.

EPIDEMIC cerebro-spinal meningitis offers the best prognosis *quoad vitam* of all the forms of meningitis, but the exact prognosis *quoad restitutionem* has not yet been clearly made out. L. Cohn discusses the experience which he has made in Posen in a series of 82 cases, and collects the available evidence, which can be utilized to form a basis of prognosis with regard to the ultimate condition of the recovered patients (*Berl. klin. Woch.*, January 11th, 1909). Fifty patients died, and of the remaining 32, 3 were lost sight of and 2 died after leaving the hospital. There were therefore 27 cases which he could deal with. He calls attention to the pathology of the disease. Beginning with a hyperaemia of the meninges, a fibrinous purulent exudation is formed in the arachnoid and pia mater, the inflammation then spreads on to the grey substance and sero-fibrinous or purulent fluid collects in the ventricles. When the disease resolves, the pus cells disintegrate and the fluid becomes partly absorbed and partly organized, leaving behind a thickening of the arachnoid and pia with adhesions. The fluid in the ventricles may either be completely absorbed or a chronic hydrocephalus may result. Even extremely severe cases may terminate in almost complete pathological recovery. He cites a case in which the only residue left after a very bad attack was deafness. The child died of myocarditis complicating diphtheria a year later, and the *post-mortem* examination revealed some adhesions of the meninges and the bone in the site of the anterior fontanelle, but otherwise no macroscopical changes at all. The 27 cases may be divided into 8 mild cases, 15 medium cases, and 4 severe ones. In the mild cases the recovery was complete. The examination undertaken after recovery failed to reveal any abnormal sign. The intelligence was good and the children were holding their own at school. Some of the patients belonging to the medium cases recovered completely. In 2 cases paralysis of the extremities and of the ocular muscles were present when the patients were discharged, but disappeared completely at a later date. In 4 of the cases permanent symptoms were met with. Headache, especially after exertion such as bearing down or stooping, was complained of. Weakness of the arms and legs, which prevented the persons from performing any exercises involving the expenditure of exertion, was seen in 3. Loss of memory was complained of by 3 of the patients, while in 2 there was distinct loss of power of concentration and attention. Of the 4 patients belonging to the class of severe cases the child who died of myocarditis was one; 2 further patients were deaf on recovery; in both of them there was paralysis of the facial nerve; in one there was besides paralysis of the right arm; the paralytic symptoms cleared up completely, but the deafness persisted. The last case may be described as one of extreme severity, and the clinical history and description of the child after recovery admits of the possibility of a complete *restitutio ad integrum*. The author further records that agglutination with Weichselbaum's meningococci was found to be positive after more than two years in 2 cases.

140. Physical Causes of Cardiac Murmurs.

BRADSHAW (*Arch. des Mal. du Cœur, des Vaisseaux, et du Sang*, June, 1908) thinks that the view that valvular murmurs are due to a vibration of the valves caused by friction between the blood current and the valve is one which it is very difficult to uphold. In the first place, Poiseville has shown that there does not occur any friction at the valve. The theory that the murmur is due to vibrations of the blood is based upon the fact that when a liquid passes from a narrow into a larger space there is produced at this region a fluid vein. If one listens with a binaural stethoscope, whose upper opening is closed by a tightly-stretched rubber membrane over a rubber tube connected with a stream of water, one finds that with a moderate rapidity of flow of water no sound is heard, provided the tube is of uniform calibre throughout its length; if, however, the tube be narrowed by pressing between thumb and finger, a sound resembling a cardiac murmur is heard; if the constriction is marked and the stream of water strong, the hand feels a well-marked thrill. Careful examination further shows that the most marked vibrations occur, not at the point of constriction, but just beyond, and that these vibrations are felt for a considerable distance further on. The sound is heard for a certain distance above the constriction, but the thrill is not propagated on this side of the constriction, except under special circumstances. This experiment further shows that the sound is due to vibration of the fluid vein inside the tube, and not to vibrations of the edges of the constriction. If this explanation be accepted, one can readily understand the localization of the majority of valvular murmurs, the systolic murmur of mitral regurgitation, however, being an exception. According to the above view, this murmur ought to be best heard over the left auricle, and not, as every one agrees it is, at the apex beat of the heart, and to explain this the author puts forward the views of Petit, Pye-Smith, and Sansom, none of which he thinks are sufficiently explanatory. His own explanation is summed up as follows: The extremity of the cone formed by the mitral flaps is situated midway between the apex of the heart and the insertion of the flaps, and this cone, as Noel Paton has shown, is always filled with blood. In mitral insufficiency the pathological sluice is found about the extremity of the cone, and a fluid vein will therefore arise at the middle of this cone in the blood which fills it. The cone of blood surrounding this fluid vein will be put into vibrations, which vibrations will be conducted to the valves (representing the walls of the rubber tube in the experiment already described). These valves being, however, very thin, offer little or no resistance to the transmission of vibrations, which, traversing the valves, propagate themselves to the blood in the interior of the left ventricle surrounding the cone. Reflection of the vibrations to the walls of the cavity then occurs, the whole mass of blood in the ventricle will be brought to vibrate uniformly, and this vibration will be conducted especially to the apex, since at this part the muscular wall is thinner than at others, and because this part is nearest to the thoracic wall. In fact, the vibrations which arise in the fluid vein are conducted to the apex of the heart by the blood, this being rendered possible by the anatomical disposition of the valves.

141 Raynaud's Disease.

SACHS (*Amer. Journ. of Med. Sciences*, October, 1908 regards Raynaud's disease, erythromelalgia, and allied conditions as far more often the expression of disease of the peripheral blood vessels than associated with central nervous disease, Raynaud's disease being a pure angioneurosis, either occurring as an independent form of disease or in association with some central nervous affection. From observations upon an unusually large number of such cases it is probable that malnutrition, premature arterio-sclerosis, and occupations involving a retardation of the venous circulation—for example, tailoring, sewing-machine work, etc.—largely enter into the etiology; and, although a large number may be due to syphilis, it would seem that the rest in bed, with elevation of the foot, application of heat, etc., by improving the return circulation, does more to improve the condition than can be brought about by severe antisyphilitic treatment. Pathologically, marked interference with the peripheral blood supply is present in all classes of cases, and their study has drawn attention to the importance of routine examination of the dorsal artery of the foot. Raynaud's disease and erythromelalgia are often associated with one another, the types blending so readily that any marked line of demarcation cannot always be drawn. Clinically, the disease may at one point correspond closely with the erythromelalgic type, and later with the Raynaud type, erythromelalgia being relatively frequently associated with dry gangrene. Cases occur also which at the outset are typical of Raynaud's disease, but later might well be designated cases of spontaneous gangrene due to obliterating endarteritis. Occasionally Raynaud's disease is associated with chronic rheumatism, and with cases of cerebral endarteritis, and attention is called to the association also of intermittent claudication with symptoms of the disease. Notes of 6 cases are given typifying the points to which attention is directed.

SURGERY.

142. Suture of the Lung for Severe Haemorrhage.

LOTSCH publishes the details of two cases of suture of the lung, performed for bleeding which threatened the life of the patient (*Muench. med. Woch.*, January 19th, 1909). The first patient was a workman, aged 26, who was stabbed with a knife in the left side of the back. The extreme pallor of the face, etc., the soft, small, rapid pulse, and the physical signs pointed to bleeding into the left pleural cavity. The chest was opened in Brauer's plus pressure chamber, and on increasing the pressure to 17 cm. about 1½ litres of blood escaped. The wound in the lung was found and closed with catgut sutures. Saline infusion was given after the operation, and the pulse improved. The recovery was disturbed by a purulent effusion into the pleura which proved to be sterile, while fibrolysin injections were given to prevent contraction of the pleural adhesions during healing of the empyema. He was discharged well. The second patient attempted to commit suicide by shooting himself twice through the chest. The clinical diagnosis was wound of the left lung, haemopneumothorax, and possibly wound in the heart. At the operation a large quantity of blood was evacuated from the pleura, and, after the field of operation was clear, the two shot wounds were found and sutured. This patient also got an empyema, but with suitable treatment complete healing took place, and the man was almost well when discharged. The shots were not found at the operation, but were seen after by Roentgen examination. In discussing the cases Lotsch justifies his procedure by showing that over 40 per cent. of such cases die if treated expectantly. The difficult question to decide is when is a pulmonary haemorrhage abundant. He was guided by the degree of anaemia. He discusses the technique of the operation, and also adds a few words on the treatment of secondary empyema, which appears to be common after intrathoracic operations.

143. Uretero-Intestinal Anastomosis after Total Cystectomy.

LEGUEU (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 33, 1908), in a report on a case of total cystectomy for bleeding tumours, communicated by Marion, after dealing with the indications for extirpation of the bladder, discusses the difficult question of what to do with the ureters. To leave the open ends in the wound is, as is proved by the fatal result of Marion's case, to court disaster, and the attempts to overcome the difficulty by attaching them to the skin or to the wall of the vagina have failed. Uretero-rectal anastomosis becomes a very serious procedure when both ureters have been divided, as it has recently been shown by Papin that such a course has been followed by 16 deaths in 19 cases of total cystectomy. In some of these cases the fatal result occurred soon after the operation, while in others it was delayed for some months and was due to pyelonephritis and pyonephrosis. Legueu suggests that it might be better to practise double nephrostomy; but to those surgeons who would hesitate to subject by such treatment their patients to very serious infirmity, and who decide on discharging the urine into the intestine, he would propose that the double implantation be effected in two stages with an interval of some few days. In a discussion of Legueu's report it was held by Tuffier that the late evils of uretero-intestinal implantation originate in stenosis of the distal ends of the ureters and in consequent urinary stagnation and renal infection. By preserving a collar of vesical mucous membrane, and, if possible, of the whole thickness of the wall of the bladder, at the end of each of the detached ureters, and by suturing this to the margins of the opening in the intestine, the risks of ascending infection, it is held, may be diminished.

144. Metastases of Glioma Retinae.

IT is quite a common thing for a malignant glioma to involve the extraorbital structures of the face and head, but secondary growths in distant parts of the body are infrequent. Wintersteiner (*Das Neuroepithelioma Retinae*, Wien, 1897) collected 497 cases of glioma. In 46 cases the adjacent lymph glands were affected; in 43 the brain and meninges; in 40 the cranium and face bones; in 9 the parotid gland. The metastatic growths were fewer; the skeletal bones in 9 cases; the liver in 7; the ovary and kidney in 2; the lungs and spleen 1 each. Fehn (*Centralbl. für prakt. Augenheilk.*, 1900, xxiv, 129) reports a case with metastatic growths in the liver, the inguinal glands, the ribs, and the mediastinum. Radcliffe and Goldberg (*Arch. of Ophthal.*, 1907, xxxvi, p. 223) found secondary hepatic tumours; J. P. Gardiner (*Arch. of Ophthal.*, xxxvii, p. 657, November, 1908) collects these cases, and gives a detailed account of one of his own which is illustrated by plates, showing the head with recurrent growths in each eye, and the histology of the primary glioma and its metastasis. The skull and meninges were extensively involved, with the bones adjacent to the orbit, the cervical glands, the ribs, the vertebrae, the spinal canal and dura, the testicle, the os ilei, the pubes, the ischia, the long bones of the leg, and the manubrium. In short there was general and extensive dissemination of the glioma.

145. Early Orthopaedic Treatment in Poliomyelitis.

W. R. TOWNSEND (*Amer. Journ. of Orthop. Surg.*, August, 1908) says the prevention of deformity has always been considered by orthopaedic surgeons as of the utmost importance, but in most diseases they have been able to accomplish but little in a practical way as they have rarely been permitted to see cases until after the deformity has occurred. This statement applies with particular force to the deformities following infantile paralysis. A recent epidemic in New York, probably the largest in numbers ever known, has provided the author with an opportunity for a study of these cases from the onset. Whereas in 1906 but 39 cases were seen at the hospital for ruptured and crippled, in 1907 387 applied which had been stricken with the disease that year. The first fact of importance noticed was the large number applying during the early stages of the disease. The plan followed was to advise complete rest until all symptoms of hyperaesthesia and of the weakness following the attack had passed. Many did not believe that the proper way to regain the lost power was to keep the limb quiet, and that this was beneficial was a most difficult matter to impress on them. That the cases so treated have done far better than the others is the firm belief of the writer. Warm coverings to the affected part were advised and some limbs were immobilized for a time in plaster-of-Paris. Later the galvanic current was given together with massage and salt baths, and a very gradual return to use of the muscles affected. As soon as it could be clearly made out that the paralysis of any muscle would, if not treated by orthopaedic measures, result sooner or later in a deformity, suitable apparatus was applied. The conclusions to be drawn from the study of these cases are that infantile paralysis if not treated suitably at the commencement is, in the majority of instances, followed by deformity and that practically all these deformities can be prevented by appropriate treatment. The prevention of the primary deformities tends to a greater degree of recovery and prevents the occurrence of secondary deformities.

OBSTETRICS.

146. Modern Treatment of the Puerperium.

OPITZ (*Med. Klin.*, January 3rd and 10th, 1909) has treated 235 puerperal women by Küstner's method of letting them get up very early. Unless contraindications—that is, sutured perineum, operations on the placenta, fever, great weakness, cardiac defects, or similar troubles—exist, he allows the women to get up as soon as they have thoroughly rested—that is, when one night has elapsed since delivery. They sit and walk about as they like, only after mid-day they must go to bed for a few hours. None are forced to get up early, and the unanimous opinion of cultured women treated thus was that they felt incomparably better and recovered quicker when they were able to quit bed earlier. Opitz attributes the pallor, languor, and giddiness on getting up at the end of fourteen days and many cases of thrombus to the long lying in bed of the old treatment. Immediately after delivery each patient receives a firm body bandage fastened by straps, and a strap passes between the legs to keep up any protrusion of the genitalia. Gymnastic exercises, according to the individual strength, are usually undertaken from the second day—that is, rising up from the back without help from the arms, exercises for the perineal muscles, etc. The perineum is also played upon by tepid and cold sprays. Of 235 women, 56 got up on the first day, 65 on the second, 27 on the third, 52 from the fourth to sixth days, 21 on the seventh and eighth days, and 14 later. In the cases getting up from the fourth to sixth days special reasons—ruptured perineum, etc.—prevented them getting up earlier. The three chief dangers, according to the opponents of the treatment, are: (1) Embolism,

(2) uterine displacement, (3) interruption of convalescence. (1) In the clinics where this treatment has been tried emboli have not occurred; the longer bed is kept the greater the retardation of the blood stream and the easier thrombus formation. (Where a thrombus exists, absolute rest in bed is, of course, urgently indicated.) (2) Küstner and others have long proved that in the upright position anteflexion of the uterus is increased. Opitz's statistics show that getting up early does not favour retroflexion, and slack abdominal walls are the exception. Involution is satisfactory. Of the 121 examined on the tenth or eleventh days, and who had got up from the first to third days, the uterus was the size of a fist or larger in 33, about the size of a goose-egg in 58, smaller than this down to almost normal size in 30 cases. (3) Convalescence was in no way interrupted, and no increased tendency to puerperal infection was shown by those getting up on the earlier days, though existing infection may certainly be made much worse by early movement. Opitz observed no marked effect of the getting up early on the pulse, and his cases do not bear out Stöckel's opinion that scopolamin is a cause of rapid pulse. The chief difficulty is to prevent the newly-delivered woman from leaving hospital, and this method is more risky in private, where such exact observation of the patient is not possible. It is very important that the mind should be quite at rest, and no household duties should be undertaken, and very few visits received. Only 5 of the 235 women developed mastitis, in every case slight. The prophylactic treatment during the last six weeks of pregnancy consists in thoroughly cleansing the breasts with warm water and soap every other night, drying them and touching them with 10 per cent. tannin spirit. Later, after each feed the nipple is covered with lanolin ointment, which is washed off, before the child is put to the breast, with boric lotion or boiled water. Cases treated with gaudanin were not so successful. If rhagades appear the child is put to the breast with a nipple shield. In the 1.28 per cent. cases in which mastitis occurred (compared with 3.18 per cent. of Olshausen's cases) the child was not put to the breast any more; the breast was bandaged up and packed with an aluminium acetate compress. No further treatment was required. Whenever possible only one breast is used at one feed, a quarter of an hour being the maximum time allowed. At night the children are all separated from their mothers. As regards Wassermann's syphilis reaction, of 135 mothers, 12 gave positive results, while only 7 children gave the serum diagnosis. In few of these cases did either mother or child show any clinical signs of syphilis. Of 163 women on whom Wolff-Eisner's ophthalmic reaction for tuberculosis was tried, 39 reacted positively, while only 2 showed clinical signs of the disease. Pirquet's skin reaction remained negative in the corresponding infants. Opitz allowed the mothers to suckle unless the tuberculosis seemed to be progressive, which only occurred once. He takes Walcher's standpoint, and anticipates better nutrition and sometimes dying-out of the tuberculosis when they are allowed to suckle. He allows ordinary diet, but articles likely to cause flatulence are avoided. The children are first put to the breast at the end of twenty-four hours, and in few cases did the nourishment prove insufficient. From the outset only six meals are allowed, at 6, 9, 12.30, 4, 7, and 10 o'clock. During the night the children are not fed at all. After birth 1 per cent. of silver nitrate is dropped into the eyes of each infant, but after Herff's experience Opitz will change to sophol. The treatment of the navel consists in ligaturing the cord about 2 c.cm. from the umbilicus. After the bath, the navel is dabbed with alcohol, covered with sterile gauze, and a gauze bandage wrapped round the body. If the navel is soiled with urine the bandage is changed, and after dabbing with alcohol powdered xeroform is employed. The remains of the cord fall off between the fifth and ninth days, occasionally not till the tenth. Until this occurs the baby is washed but not put in a bath.

GYNAECOLOGY.

147. Haematometra after Pregnancy.

BRINDEAU (*Annales de Gyn. et d'Obstét.*, February, 1909) reports two cases of acquired haematometra—a condition much less frequent than the congenital type. A young woman was delivered early in 1904, and suffered from puerperal complications. The periods reappeared, and then ceased; but, when due, violent hypogastric pains set in with a sensation of weight in the perineum. There was always obstinate constipation at the same time. These disturbances subsided in two or three days, but a tenderness in the abdomen persisted. In the summer of 1908 Brindeau examined the patient and defined a spherical tumour like a pregnant uterus, which reached up to the pubes above, and bulged inferiorly into the vagina, coming down to within an inch of the vulvar cleft. The tumour was smooth and tense, and no trace of a cervix or external os could be detected. On palpation it was found to be of an hour-glass shape, as though the uterine cavity and cervical canal were distended separately; and, further, the cervix was separated from the uterus by a sharp angle—a marked anteflexion. The round ligaments could be felt to be very tense. An incision was made in the middle of the vaginal part of the tumour, and a tumblerful of a black, syrupy, odourless liquid came away. The incision was enlarged, and then it was found that the cervical canal was the seat of the distension, the upper lobe of the tumour being the uterus, firm and retracted, seated on the top of the cervix converted into a blood cyst. The cavity was plugged with a strip of gauze. Ten days after the operation the catamenia set in, and were painless. Three months later the patient was well, and the periods were regular. The second patient had contracted pelvis and albuminuria. Basiotripsy had to be performed in labour, and the puerperium was complicated. The periods did not return, and six months later a haematometra developed. It was treated like the first case, and with similar success.

148. The Revival of the Vaginal Surfaces in Colporrhaphy.

VAUVERTS (*Le Nord Méd.*, November 1st, 1908) points out a little modification which he has employed for the purpose of facilitating the removal of the strip of mucous membrane in the repair of the perineum. Having marked out the extent of the denudation, he seizes the upper corner of the patch with artery forceps, and places the left index finger underneath, folding the mucous membrane over it. In this way it is easily and safely removed, by means of either bistoury or scissors, care being taken not to leave any islands of intact mucous membrane to prevent accurate adhesion of the raw surfaces.

THERAPEUTICS.

149. Collargol Enemata in Typhoid Fever.

T. MIRONESCU (*Berl. klin. Woch.*, January 4th, 1909) finds that serumtherapy has not yet gained a firm foothold in practice, and that Brand's cold water treatment is still the classical method of treating typhoid fever. It has reduced the mortality considerably. Modern teaching has shown that this disease is a general and not a local condition, and that the intestinal symptoms are only prominent, while the causal microbe is to be found elsewhere as well. It can be regarded as a septicaemia, especially in the early stages, and for this reason it is rational to deal with it as other forms of septicaemia are dealt with. Collargol has proved itself of value in the treatment of the various forms, and indeed this drug has also been tried in typhoid fever. It has been warmly recommended by a number of observers; but on the whole the results have been disappointing, which the author believes to be due to the fact that comparatively small doses were employed. Large doses of collargol have been given in septicaemia by Seidel as enemata, and good results were obtained. For this reason the author has treated cases of typhoid fever with collargol enemata. Each patient was given one or two enemata daily containing 5 grams of collargol in 100 grams of water. A cleansing enema was given first. When the collargol enemata were not retained, 10 to 12 drops of tincture of opium were added to them. When even these were not retained, he gave collargol by the mouth in capsules containing 1 gram each. The effect was much more marked when given in large doses per rectum than when given by the mouth. Even when 10 grams were given daily for from ten to twelve days no intoxication was produced. In all, 17 cases were treated in this way, and the results were compared with those obtained by cold water treatment alone. The cases were taken at random, and included severe instances of typhoid fever. The fever was beneficially influenced, the general condition was improved, the duration of the illness was shortened, and the frequency of complications was diminished. As a rule, the temperature fell gradually, and only when the enemata were given late was there anything approaching a critical fall. With regard to the cutting short of the attack, he states that the fever lasted from ten to fifteen days longer

in the cases treated by cold water than in the cases treated with collargol enemata. In a certain number of cases the initial leucopenia disappeared after the treatment. Among the 17 patients treated with cold water 4 died, while none died who had been treated with collargol. He is therefore inclined to regard the collargol enemata treatment of typhoid fever as a very effective one.

150. Intravenous Arsenic and Tuberculin Treatment.

F. MENDEL considers that since the organism loses its power progressively to manufacture antibodies in tuberculosis, and since all attempts to immunize in a passive manner have failed, all the methods of curing the disease specifically have been unavailing (*Muench. med. Woch.*, January 5th, 1909). It therefore becomes necessary to employ the specific products of the bacilli in order to obtain a curative action in such a way as not to produce deleterious effects, and at the same time to improve the nutrition and raise the resistance. For this purpose he believes that a combined treatment with tuberculin and arsenic can be recommended. Whatever the views are in connexion with the value of tuberculin in the treatment of tuberculosis, he claims that when properly applied it can assist the organism in forming those protective substances which tend to counteract the poison of the disease. Koch showed in 1901 that when given intravenously, even in minimal doses, tuberculin (T.O.) raises the agglutinating power of the serum of tuberculous subjects rapidly. This may not be accepted as absolute evidence in favour of the increase of the above-mentioned protective substances, but other facts tend to support this view. Tuberculin produces an inflammatory stimulation in the neighbourhood of the tuberculous foci, which stimulation if not excessive induces an active hyperaemia in the perituberculous zone. Mendel conceives the idea of utilizing this perituberculous inflammation in his combined treatment without relying on the tuberculin to cure the disease. It is known that certain drugs are attracted and deposited in preference by inflammatory stimulation. If one can succeed in producing a perituberculous inflammatory reaction of mild degree by means of very small doses of tuberculin, a simultaneous application of arsenic will lead to the attraction of this metal to the foci and the formation of a nutritive stimulation, which should form an adequate protection against the process going on in the diseased foci. He chose atoxyl for this purpose, and, using a 15 per cent. solution, injected 0.05 gram, increasing to 0.3 gram. These doses do not produce any toxic symptoms when applied intravenously. The atoxyl injections were repeated every two days, but it was found unnecessary and undesirable to increase the tuberculin doses more frequently than every week. Severe febrile reactions should be avoided, but moderate general reactions with slight fever increase the activity of the treatment. The patients treated in this way were suffering from the first or second stage of the disease. The general condition of the patients improved during the treatment, the appetite improved, the weight increased, the night sweats diminished, and the cough got better. The number of râles diminished and the quantity of sputum also was lessened, while the character was changed from a purulent to a clear type. He considers that the combined treatment is adapted for cases which do not improve under the ordinary sanatorium treatment, and also to ambulatory patients who are well enough to visit the physician at his house.

151. Phtysoremid.

UNDER the fancy name of "phtysoremid" Krause has introduced Koch's bacillary emulsion in capsule form, which he warmly recommends for internal treatment of tuberculosis. F. Köhler has tried this remedy in a series of 42 cases. He had previously tried old tuberculin in pill form without obtaining satisfactory results (*Muench. med. Woch.*, January 26th, 1909). His results with phtysoremid were as follows: 7 patients were cured—that is, showed no signs of disease after the treatment; 7 were nearly cured, 14 were not benefited, and 13 got worse. The last patient interrupted the treatment before a definite conclusion could be formed. Two out of the 13 patients who got worse died. The results were therefore not at all good, and he is satisfied that when given by the mouth bacillary emulsion is not useful. He notes, however, that while the patients were not doing well, as far as the clinical signs were concerned, they put on weight in an extraordinary manner. This leads him to the conclusion that more care should be exercised before a prognosis is based on increase of weight. In mild cases phtysoremid may be given as an adjunct to the usual treatment, provided that too much is not expected. He begins with one "weak" capsule daily, and increases this to three or four. Then he gradually goes on to the "strong" capsules. The patient should take from 100 to 200 capsules during the treatment.

PATHOLOGY.

152. Variations of Catalase Ferment in Disease.

WINTERNITZ AND MELOY (*Journ. of Exper. Med.*, November, 1908) have investigated the presence in the human body of catalase, which is a ferment characterized by its power of decomposing hydrogen peroxide. In nephritis they find a diminution in the amount of this ferment in all the tissues examined—namely, kidney, blood, lung, liver, and spleen—but the reduction is most marked in the renal tissue. This reduction varies directly with the severity of the pathological lesions in the kidneys and the clinical symptoms. The urine also in cases of nephritis shows a much greater inhibiting power than normal urine. "This may be accounted for by the reaction of the urine, and subsequent work must prove whether or not the kidney takes any more active part in nephritis and secretes into the blood and urine a substance which manifests itself by a reduction in the catalytic activity." In the two cases of eclampsia which the authors have examined the catalytic activity of the blood was not reduced. They consider that these last observations may prove to be of great importance, because, if substantiated by a sufficient number of further cases, they will establish the use of a ready method for differentiating during life between eclampsia and nephritis. In pneumonia they find that during the stage of red hepatization the lung has an increased catalytic activity. This increase varies directly with the number of intact red blood corpuscles in the exudate and in the engorged capillaries. This influence of the red corpuscles is also shown in fresh haemorrhagic infarcts, where the increase of catalytic activity is very great. In grey hepatization, on the other hand, there is no increase. In tuberculosis the lung shows a decreased activity, probably owing to the lack of blood in the diseased area, while the lowered activity found in the other organs may also be explained by the anaemia and emaciation associated with the disease. In the cases of diabetes mellitus and jaundice which the authors investigated there was no increase of catalytic activity. One case of asphyxiation by illuminating gas and also one case of congenital syphilis, showed a marked lowering of catalytic activity. The diminution effected by *vost-mortem* change is only slight, and does not affect the results recorded. There is no marked change in the catalytic activity due to age.

153. Agglutination Studies in Tuberculosis.

H. R. M. LANDIS (*Proc. of the Path. Soc. of Philadelphia*, 1907) says that although the existence of agglutinins in a serum is not regarded as having any part in the phenomenon of immunity, it is believed that their presence affords an index to the degree of immunity present, and that as the agglutination test is high or low, or subject to an increase or a decrease, we may determine the resistance of the organism to the special bacterium tested for. Recent work on agglutination in tuberculosis has been devoted to determining its value in estimating the degree of immunity obtained by means of specific or other forms of treatment, and in forming a prognosis. Under specific treatment with tuberculin the agglutination reaction can be greatly increased, and a decrease in the agglutination power or failure to increase is usually attended by an unfavourable outcome. The author has continued the study of the agglutination reaction as met with in cases of advanced tuberculosis at the Phipps Institute, and in cases under treatment at the White Haven Sanatorium, and in negroes in the wards of the Philadelphia Hospital. The test was also applied to effusions of various kinds obtained during life, and to fluids obtained from the serous cavities shortly after death. Further studies along these lines may throw additional light on the complex question of immunity in tuberculosis. In so far as the agglutination is concerned, our knowledge may be summarized as follows:—(1) That the reaction is valueless as a diagnostic agent. (2) That it forms an available means of estimating the degree of immunity attained in tuberculosis by means of tuberculin and other forms of treatment. (3) That the absence of the agglutinating reaction in fluids containing but little albumen, such as cerebro-spinal fluid, renders it highly probable that the agglutinins are closely allied to the albumens

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

154. Pleuritic Effusion.

F. LOMMEL (*Medizin. Klinik*, No. 4, Jahrgang v) reviews the recent advances made in the study of pleuritic effusion, advances which are partly of theoretical, partly of practical interest. The importance of the diminution of vocal thrill as a sign of pleural effusion has, perhaps, somewhat diminished. Arneth, as a result of the examination of 117 cases of pneumonia, arrived at the conclusion that, as a rule, vocal thrill was absent in the second stage of pneumonia; while Wolter supported Arneth in so far as he found the increased vocal thrill of pneumonia not constant, and observed an increased vocal fremitus in pleuritic exudate. A more recently observed physical sign of value in diagnosis, first described by Grocco, is the presence of a triangular area of diminished resonance on percussion situated on the sound side near the spine, with its apex at about the height of the upper limit of the effusion. Rauchfuss explains the area of dullness on the sound side as due to the fluid-filled recess arching over like a sac in front of the vertebral column; Rathes, on the other hand, looks upon it as due to a weakening of the plexímeter action of the spine from an accumulation of fluid. On the affected side Krönig's recent description would make the three-cornered resonant area smaller than that formed by Garland's S-shaped upper boundary; the anatomical reason for this resonant area on the affected side is the drawing back of the lung still containing air on to its hilus. Illumination by Roentgen rays may clear up the diagnosis in cases of pleural effusion. By means of it the presence of small effusions which only fill up the pleural sinus can be demonstrated, and also effusions situated between the lobes of the lung, the effusion in the latter case being differentiated from abscess in the lung by the absence of elastic fibres in the sputum. Thickenings of the pleurae can be differentiated from effusions by the fact that the shadow due to thickening varies in intensity according to the distance from the screen, and thus, for example, a thickening of the posterior pleura will cast a more distinct shadow if the screen is behind than in front. The upper limit of a pleural effusion as tested by percussion may appear to be different from that obtained by Roentgen-ray illumination; but this does not necessarily show inaccuracy in percussion, because an effusion with a horizontal upper limit may throw a shadow whose upper line rises from within outwards as a result of the increased amount of fluid through which the lateral rays have to pass, and partly also because of the lateral part of the lungs being more readily compressed by fluid than the part near the root. In practice, the great question as to the course of a pleurisy is whether it is or is not tuberculous. The disadvantage of many of the methods of attempting to determine whether or not the fluid is tuberculous in origin by means of culture media or inoculations of animals, is the length of time which must elapse before certainty is arrived at. Thus Vetter uses a peptone glycerine water as culture medium, and finds the method more reliable than that of animal inoculations, but the time needed is from twenty-one to twenty-five days. When guinea-pigs are used and inoculations made into the peritoneal cavity, according to Grober, from three to four weeks is needed. Bloch shortens the time to from ten to fourteen days by injecting fluid into the bend of the groin, and injuring the lymph glands by pressure between the fingers. Weber arrives at much the same result in time by using subcutaneous injections. Nattan-Larrier inoculates a suckling guinea-pig at the base of the lacteal gland, and finds bacilli present in the milk at the end of five days; the only disadvantage of this plan is that, even in the larger institutes, there is not a constant supply of such animals. In a more restricted number of cases cyto-diagnosis is of great value. In general it may be said that an excess of lymphocytes as compared with polymorphonuclear leucocytes in an acute feverish condition denotes with great certainty a tuberculous affection, but the absence of lymphocytes does not exclude the possibility of tubercle. The question as to whether an effusion is essentially pleuritic or of the nature of a transudation does not, as a rule, present much difficulty, except where an inflammatory process is combined with a hydraemic transudation; in this connexion may be mentioned those obstinate right-sided pleural exudates which are not infrequently found in combination with diseases of the cardiac muscle, and to which attention has been specially called by Gerhardt. Here the absence or insignificance of other pathological collections of fluid, the obstinate course and the tendency to relapse even where good diuresis is maintained, all go against the diagnosis of simple transudation. In considering the question of paracentesis in the case of serous or sero-fibrinous exudates, too narrow a construction is not to be put on the vital indication. Gerhardt has shown how the injurious effect of a pleural exudate upon the lesser circulation is minimized by deepening of the inspirations, so that the intrapleural pressure in cases of recent exudation, where the pleurae are not much thickened, may be even more strongly negative than in health; the powerful muscular action needed to accomplish this may, however, suddenly fail through exhaustion, and thus cases of sudden death may be explained.

155. Diseases associated with Dentition.

HUTINEL in the *Annales de Médecine et Chirurgie* for March discusses the question, Is dentition a cause of infantile disease? The opinion that it is has been held for centuries, but for the last fifty years it has been in dispute. Guersant maintains that the period of dentition is a time when the physical powers of resisting disease is at a low ebb, and he compares it to the menstrual, the puerperium, and the climacteric periods, when disease is easily acquired. He quotes Magitot, Politzer, and especially Dr. Comby, as holding the same view. But he also points out that one cannot by a stroke of the pen destroy the result of observations made by many physicians and maintained by the ancients. The ideas that the ancients had concerning cold have lost nothing of their accuracy, notwithstanding the discovery of the pathological agent of pneumonia; we have found, however, that cold lights up their virulence. Progress in medicine does not take place in one direct line—there are too many difficulties for that; it is by a series of zigzags that the ultimate goal is reached. Teething is accompanied by pain; this is manifested by the cries and the habit of biting in infants. The same can be seen in animals, such as a young dog. Delabarre proved fifty years ago that irritation of the nerves of the gum causes hyperaemia, redness and swelling of the tissues, and prolonged vasomotor trouble. This irritation of the gums is accompanied by increased secretion from the salivary glands, and also increase in the secretions of the whole of the intestinal tract, for the parts are intimately connected. The congestion disappears as soon as the tooth makes its appearance, and the retraction of the mucous membrane enables the tooth to grow rapidly. The turgescence favours infection. An infant just born, and during the first few days of life, is not infected; this comes with time. Hutinel proceeds to quote Drs. Rillet and Barthez as authorities who believe that diseases accompanying dentition are due to infection, and he states that this opinion is supported by Trousseau. Children suffer from diarrhoea because the infection starting at the mouth passes along the whole length of the intestinal tract. But to conclude that dentition apart from infection could, *per se*, cause serious diarrhoea, or infantile cholera, would be absurd. The pathological state has for its commencement a vicious alimentation, dentition further reduces the power of resistance, thus is produced a morbid congestion, which paves the way for bronchopneumonia. The diminution of the resisting powers is shown locally by stomatitis and aphthous patches in the mouth. The local infection is declared at a distance by the enlargement of the glands of the neck. But the first signs of infection may show themselves in the chest. Hutinel has frequently seen congestion and bronchitis both disappear with the first appearance of the teeth. Syphilis is readily contracted at this period of life. It is due to want of care on the part of attendants; it is seen at the anus, where may be found enormous mucous plaques; they may disappear by a few days' treatment. In childhood it is dentition that is the chief means of infection; in the adult it is decay of the teeth. The evolution of the teeth at any period constitutes a period of danger.

156. Ascaris Lumbricoides Escaping through Ear.

HOLM (*Ugeskrift for Laeger*, No. 6, 1909) reports the case of an *Ascaris lumbricoides* passing through the Eustachian tube and out of the ear in a child 3½ years old. According

to the mother's account, the child whilst playing began suddenly to sneeze and scratch her nose, and after a few moments to scream in agonizing pain, holding her hand to her ear. The mother, thinking that the child, who had for some time been suffering from post-scarlatinal otitis media, was seized with sudden pain, began to syringe out the ear, when she noticed a worm trying to work its way out of the ear. She managed to pull it out, and brought it with her for inspection. The child was found to have a large defect in the tympanic membrane, but otherwise nothing abnormal was detected in the fauces.

SURGERY.

157. The Surgical Treatment of Suppurative Pericarditis.

ELIOT (*Annals of Surgery*, January, 1909), in concluding a review of 22 collected cases of suppurative pericarditis, holds that it cannot be too strongly emphasized that every case of this affection in which the patient is not moribund should be treated by an operation which, when a general anaesthetic cannot be tolerated, may yet be successfully carried out under some local anaesthetic. Puncture alone affords in most cases at the best but temporary relief, and, as a rule, the removal of pus in this way is but partial, and its reaccumulation is rapid. The use of this method should, it is urged, be exclusively restricted to diagnostic purposes. The author objects to the formation of a musculo-cartilaginous flap, including two or more costal cartilages, and also to Allingham's "epigastric" operation, which, though it offers the advantages of a dependent outlet, and of diminished risk of opening the left pleural cavity, is likely in its performance to take up too much time. The simplest and most rapid exposure of the pericardium is accomplished, the author states, by resection of the inner part of either the fifth or the sixth costal cartilage through an oblique incision of the skin made parallel to its long axis. After division of the perichondrium and the triangularis sterni, the pleural angle in the absence of adhesions is pushed outwards without, if possible, any extension of the skin incision. If obliteration of the pleural cavity has taken place, the underlying pericardium may readily be opened without danger of exposing the left lung. The presenting pericardium should be divided by scissors between two pairs of forceps, the opening being of sufficient size to permit the passage of a finger. Irrigation with either a saline or a weak antiseptic solution is thought to be desirable, but it is pointed out that inadequate provision for the free exit of the injected fluid from the interior of the pericardium may determine a fatal issue. The irrigation may be dispensed with if the patient's condition be so bad as to indicate a speedy ending of the operation. The edges of the opening in the pericardium should, whenever it be possible, be sewn to the margins of the wound in the skin. Drainage, which is undoubtedly favoured by the movements of the heart, may be further assisted by the insertion of a rubber tube or of a capillary gauze drain. In a case under the care of the author drainage was kept up for several weeks without causing any trouble, but, as has been pointed out by Riedel, the presence of a rubber tube may excite stormy and irregular action of the heart. In cases of recovery subsequent impairment and irregularity of the heart's action are, the author asserts, marked exceptions, nor is the patient likely to suffer from any future indication of cardiac displacement. Such satisfactory result, however, it is pointed out, cannot always be expected. In 7 of the 22 cases collected by the author full details are wanting in regard either to the nature of the effused fluid or to the definite results of the treatment. In the remaining 15 cases resection of one or more costal cartilages resulted in 9 instances in recovery and in 6 in death. These results may be regarded as satisfactory, as suppurative pericarditis is in a great majority of instances a secondary infective disease. The fact that recovery may occur even when pyopericarditis is part of a general sepsis certainly warrants, the author believes, surgical interference under all circumstances in which the patient is not moribund as the best and, indeed, the only means of averting a fatal issue.

158. Bier's Methods of Surgical Treatment.

DELREZ (*Archiv. Prov. de Chirurg.*, No. 1, 1909) gives the results of his experience of Bier's method of treatment by blood stasis in some branches of surgical work, reserving his views on the application of this method to tuberculous affections and diseases of bone for a future paper. In order to carry out this treatment properly and efficiently surgeons, it is held, should not trust to printed information but endeavour to acquire direct experience of the complicated technique of the method in Bier's own clinic. Arterial hyperaemia, the author reports, has given good results in the treatment of chilblains and in some cases of articular stiffness, but failed in cases of varicose ulcer and of chronic articular effusion of non-tuberculous origin. Venous hyperaemia, it was found, did not simplify the treatment of boils and whitlow. This latter method by hindering the development of infection exerts a favourable influence on soiled wounds, but it is difficult in such cases to estimate exactly the part played by Bier's method of establishing stasis, as stasis is usually applied under such circumstances by other means. In most cases of gonorrhoeal arthritis, even in its most severe forms, venous stasis will lead to a complete restoration of the function of the affected joint. The main condition of success in the application of the method of such cases is a thorough practical knowledge of its technical details. The most satisfactory results obtained by the author from venous stasis have followed its use in the serious cases of acute purulent arthritis of traumatic origin and due to streptococcic infection. In other cases of acute purulent arthritis no good results have been obtained. It is pointed out that in the treatment of articular affections exact immobilization of the diseased joint is incompatible with the application of stasis in accordance with Bier's principles, and that, consequently, it often happens that in subjecting articular disease to venous stasis with the hope of preserving complete mobility of the affected joint, a very unsatisfactory result is obtained, the articular surfaces being displaced and the patient after the treatment being left with a limb less useful than one in which ankylosis has taken place with the bones in good position. In concluding his paper the author asserts that venous stasis is capable in many cases of modifying rapidly and to a considerable extent the evolution of acute infective lesions, this action being manifested by favourable changes in the nature and amount of the secretion from the wound.

159. Cataract following Electric Shock.

M. TERRIEN, at the Ophthalmological Society of Paris (*Rec. d'Oph.*, November, 1908), described a case in which cataract in one eye came on two months after the patient had received a discharge of 500 volts, having accidentally touched a conductor with his hand. He remained unconscious for two hours, and was badly burnt about the forehead. Such cases are not infrequent, but must be distinguished from fulguration and direct lightning stroke. They have been carefully studied by Gonin (*Annales d'Oculistique*, 1904, T. cxxxi, p. 81). The cataract in Terrien's case was a soft one with moderate swelling of the lens, and matured rapidly. There can be little doubt that it was caused by the electric discharge.

OBSTETRICS.

160. Vaginal Thrombosis in Pregnancy.

FUNCK-BRENTANO (*Comptes Rendus de la Soc. d'Obstét. de Gynéc. et de Pédiat. de Paris*, etc., January, 1909) reports a case where a single woman, aged 22, became pregnant for the first time. Gestation, closely observed in the later months, proceeded normally; but one day very near term the patient felt something coming out of the vulva when she was raising the leg of a heavy table to disengage the corner of a table-cloth. She declared that she had not strained herself before during the pregnancy, and that the last coitus was in the third month. The patient was sent into a lying-in hospital, as it was suspected that the head of the child presented. Funck-Brentano found that an oval pedunculated body, of the size of a hen's egg, projected from the vulva. It somewhat resembled a loop of strangulated intestine, and blood oozed from its surface. The pedicle was short, but very distinct; it consisted of a fold of vaginal mucosa attached over an area 1½ in. in diameter to the posterior column of the vagina, coming down at its lowest point to within ¾ in. from the fourchette. When it protruded it made a retrocele, which disappeared when it was reduced. The patient had varices of the labia and both lower extremities. The tumour was removed by division of the pedicle close to its attachment, a small artery was divided and ligatured. Labour set in five days later, and ended spontaneously. The tumour was examined under the microscope, and was reported to be a collection

of blood amidst a varicose plexus of veins in the substance of the vaginal mucosa. Brindeau described in 1903 a case where a pedunculated thrombus of the size of a cherry was detected two days after a normal labour. It was attached to the posterior column of the vagina, and in consistence resembled a testicle. It was not removed, and had most probably developed before labour. In all other recorded cases of vaginal thrombus associated with pregnancy the tumour made its appearance in the later months of pregnancy. In 12 out of 14 cases the patients were primiparae, and in 2 secundiparae; thus this tumour has never been observed in multiparae, and, besides, the patients were nearly all young, only 3 being over 24 years old. In 8 cases, at least, there were adjacent varices, and in only 1 was it specified that this complication was entirely absent. After the reading of Funck-Brentano's report there was some discussion as to whether the term "thrombus" was correct.

161. Glycosuria in Pregnant Women.

WILLIAMS (*Amer. Journ. of Med. Sci.*, January, 1909), in considering the clinical significance of glycosuria in pregnancy, points out the importance of determining whether the sugar in the urine indicates a true diabetes, or a transient, alimentary, or recurrent glycosuria, or merely a lactosuria. If no sugar occurs as lactose it is without clinical significance, and is probably associated with premature activity of the breasts. If a glycosuria of the alimentary type is present its clinical significance is also unimportant. The mere reduction of Fehling's solution is therefore an insufficient guide to the prognosis of any particular case, as it is essential to determine whether the sugar is present in the form of glucose or lactose. Practically this may be ascertained by using the fermentation saccharometer, as glucose ferments readily while lactose does not. If the glycosuria appears late in the pregnancy, does not exceed 2 per cent. in amount, and is not accompanied by symptoms, it is most probably transient and may disappear spontaneously or persist throughout the pregnancy, but in either event its clinical significance is slight, though the patient should be carefully watched. A more serious condition is that in which the sugar appears early in large amounts, as it may not be possible to make a positive diagnosis between glycosuria and a true diabetes until after delivery. Pregnancy occurring in diabetic women and diabetes manifesting itself during pregnancy are serious complications, though the prognosis is not so alarming as is usually stated, for the majority do perfectly well, and in only a smaller proportion is the condition fatal. If the amount of sugar is large and uncontrolled by treatment, the induction of abortion is indicated even in the absence of other serious symptoms.

GYNAECOLOGY.

162. Fibroids and Pregnancy.

BOSSI (*La Ginecolog. Mod.*, January, 1909) publishes some cases illustrating some of the complications and dangers associated with pregnancy and labour in the presence of fibroids. From a consideration of these and other cases he feels justified in the following conclusions. As a general guide to conduct in these cases one ought, as far as possible, to preserve the powers of procreation and their respective organs, not blindly, but with scrupulous and careful consideration of the merits in each individual case. Care should be taken to note whether pregnancy unduly accelerates the growth of the fibroid so as to indicate the necessity of induced labour. If it is decided to let the pregnancy go on, special attention should be paid to the circulatory, urinary, and hepatic systems. The question whether pregnancy should be allowed to go to full term or interrupted at some period short of that, but permitting a living child, must be determined by the judgement of the medical man. The presence of a fibroid need not condemn a woman to sterility either natural or forced, and *caeteris paribus* one ought to encourage rather than disparage fecundation in these cases. In many cases fibroids do not interfere in any way with the normal progress of a pregnancy, in others a viable premature child may be obtained and satisfactorily reared, and further, gestation seems in some cases to indirectly prove useful in the cure of a fibroid, for this shares in the general uterine involution which occurs in the puerperium, and sometimes to such an extent that subsequent pregnancy may occur without danger. On the other hand, sterility undoubtedly favours the development of uterine fibroids.

THERAPEUTICS.

163. Fresh Air in the Treatment of Disease.

EVIDENCE that fresh air is an important factor in the successful treatment of disease continues to accumulate. Dr. Edwin Graham (*Archives of Paediatrics*, February, 1909) relates his experience gained in the wards of the Philadelphia Hospital. Before adopting the open-air method he was puzzled to account for so many deaths among infants in his wards in spite of every care in diet and nursing. In his private practice, the same type of infants were doing well, almost without exception. He finally decided to try the open-air method for his hospital patients; even in the month of January he had the children placed for two hours each day on the fire-escapes. Towels were pinned over the top of each crib to shield the child from wind. The infant mortality began to lessen immediately. Dr. Graham continued this practice for two or three years with the greatest benefits to the children. New wards have since been constructed in the hospital, and for the last five years his patients have had an abundance of fresh air both by night and day. He is no longer a pessimist when in the infants' ward, but an optimist. In the Jefferson Hospital Dr. Graham uses the roof garden all the year round both summer and winter. He now treats all his cases of bronchopneumonia and lobar pneumonia by the fresh-air treatment. The plan has been so much more successful than the older methods of treatment that he has lost more or less his dread of pneumonia as a hospital disease. The same line of treatment he adopts for typhoid patients, and his patients have done so much better that nothing would induce him to revert to the older methods. The special wards have large windows on both sides and an open door at the end; these are always open and the air of the wards is always cool, except once in two or three hours when the windows are closed whilst the children are examined for cleanliness. An effort is made to keep the hands and feet of the infants warm by means of gloves, stockings, and hot-water bottles. Dr. Graham has for the last five years adopted the open-air method of treatment for his private patients. On his first visit he instils into the mind of the mother that fresh air differs as much from stale air as fresh milk differs from impure milk. If the physician is enthusiastic the mother will be easily convinced. He find rickets, scrofulosis, gastro-intestinal disease, any and all conditions, benefited by the fresh-air method of treatment. If possible, the temperature in which a child lies should be "indifferent"—that is to say, 75° F. in summer with summer clothing, and 65° F. in winter with winter clothing. Children stand cold air very well provided their bodies are kept warm. High altitudes are useful in children with incipient tuberculosis or an inherited tendency; there is increase in heat production and an augmented metabolism, proved by the larger amount of carbonic acid given off by the lungs, and as a rule there is an increase in the red blood corpuscles. Seaside air is indicated in children convalescing from severe illnesses, especially gastro-intestinal in type. Dr. Graham exhorts all medical men to unite in preaching fresh air, vote for open squares, endorse roof gardens, and the removal of adenoids and tonsils.

164. Meat Broth for Infants.

W. STOELTZNER (*Medizin. Klinik*, February 7th, 1909) has obtained excellent results, in the case of infants brought to him with gastro-intestinal symptoms due to a diet of flour foods and sugar, by putting them on to a mixture of milk and meat broth. Bretonneau in 1818 first attempted to feed young infants suffering from atrophic chronic gastro-intestinal symptoms on milk mixed with broth instead of with water; since that time the system of infant feeding has never fallen into absolute disuse in France, some doctors recommending it, as did Bretonneau, only for atrophic infants, others for any infants for whom breast feeding was not obtainable. In Austria Mayer in 1850, Monti and v. Huttenbrenner later, have all advocated the dilution of milk by broth, Monti for children with rickets, and v. Huttenbrenner even for newborn children. In Germany A. Steffen recommends a mixture composed of 50 grams of milk, 50 grams of meat broth, 1 teaspoonful of cream, and 3.8 grams of milk sugar, as an infant food, failing human milk. Although from time to time the use of meat broths as a diluent of milk for infants has been recommended, it has never become widely popular. Stoeltzner, in the present article, describes his own experience and finds that meat broth is indicated for cases of "tabes mesenterica," or atrophy, caused by a flour-food diet. He reports on 14 such cases, one of them dating back to 1905, the other 13 belonging to the

years 1907 and 1908. The broth used was made from beef or veal, and was of ordinary medium strength; sugar was never added to the mixture. The relative strength of milk and of broth in the mixture varied according to the case. The average age of the children was five months, with an average weight of 4,055 grams (9 lb. approximately). Seven of the children had never been breast-fed, the other 7 had been breast-fed on an average for 2.7 months. The length of time of feeding on flour food was not less on an average than two and a half months. Eight children during the whole of this time had not been given any milk at all; 6 had received small amounts of milk along with the carbohydrates; to this group belonged 1 child fed on Nestlé's food and 3 on condensed Swiss milk; 8 out of the 14 children suffered at the beginning of treatment from diarrhoea, which in some cases had persisted for weeks and months; 6 children were in an especially serious condition, 2 of them showed pronounced myotonia, 1 obstinately refused food; 1 child at 3 months weighed only 2,970 grams (6½ lb. approximately). Unfortunately, in 9 cases the treatment was only carried out for a short time; but even these cases served to show that diarrhoea, when present, quickly stopped when feeding with the mixture of milk and broth was begun. In 6 out of the 9 cases a gratifying increase in weight became evident; of the remaining 3, 1 child during the time of the diet suffered from an influenza-like feverish attack, a second did not take enough food, a third soon after the beginning of the treatment began to have dry, crumbling stools. The course, in the 5 cases which remained longer under treatment, was very favourable; immediately or soon after the beginning of treatment the weight in each case began to go up, and the further increase left nothing to be desired. Although the whole number of cases is not large and they all belong to the hospital class, yet the results were so clear that the author finds himself justified in considering that the symptoms due to a flour-food diet form an indication for the milk and meat-broth diet. Further information is needed as to how long the diet should be persisted in. Two of the cases appeared to indicate that the milk and broth mixture was only of value for a few days, and that some children could after that return to milk and flour mixtures.

165. Injections of Morphine in Acute Laryngeal Spasm in Infants.

SARGNON, BARLATIER, AND MASTIER (*Ann. de Méd. et Chir.*, February 15th, 1909) quote Lesage and Cléret, who have had favourable results from the following minimum doses in cases of laryngeal spasm where operative interference seemed urgent. Respiratory difficulty vanished at once, and was, as a rule, followed by six or seven hours' peaceful sleep. There were no bad after-effects, and the writers now tend to give larger doses. Those reported are: ⅓ c.cm. of $\frac{1}{100}$ per cent. solution of morphine hydrochlorate in the first year of life, ½ c.cm. in the second year, and 1 c.cm. in the third. The same treatment has been carried out where intubation had been required, shortening the period during which the instrument was necessary and preventing renewed intubation where removal had been followed by an exacerbation of the symptoms. Treboullet and G. Bozé publish 13 cases of croup treated by injections varying from ⅓ to ¼ cg. with the following results: Two deaths in children of 18 and 19 months, where there had been intubations and tracheotomy. One uncertain case; recovery following intubation and injections. Ten successes in children from 21 months to 10 years. Difficulty of breathing vanished in twelve hours at latest. These authors administered as much as ⅓ cg. in children of 6 months without ill-effects, and obtained good results from the same doses in whooping-cough uncomplicated by bronchopneumonia. They counsel strict attention to diet and frequent examination of the urine. Sargnon, Barlatier, and Mastier publish the following observation of their own after dwelling on the bad results of tracheotomy—from which Ranke gives a mortality of 95 per cent. in children under 1 year and 75 per cent. in those under 2—urging the desirability of trying any safe form of medication tending to do away with the necessity of operative interference; they, however, emphasize the fact that the value of this treatment consists in its application to pure cases of spasm, and that it is contraindicated where there is mechanical obstruction, or where spasm is complicated by bronchopneumonia: A child, aged 14 months, had slight cough; no dyspnoea; temperature 39.9° in the morning, rise of temperature to 40.5° at night; pulse-rate, 108; no other symptoms. Intense difficulty in breathing the following night; rapid respiration-rate; no chest symptoms; no false membranes. Preparations were made for intubation and tracheotomy, the diagnosis being non-diphtheritic laryngitis. A precautionary dose of serum was administered (10 c.cm.), followed by that of ⅓ c.cm. of a $\frac{1}{100}$ per cent. solution of morphine. The patient settled in about ten minutes and slept for six hours. Uninterrupted recovery ensued. Cultures revealed staphylococci and streptococci, but no Klebs-Loeffler bacilli.

PATHOLOGY.

166. The Toxicology of Nickel Carbonyl.

H. W. ARMIT (*Journ. of Hygiene*, November, 1908) continues his investigation of nickel carbonyl poisoning by experimentation on rabbits, cats, and other laboratory animals, and arrives at the following conclusions. Nickel carbonyl poisoning is a particular instance of nickel poisoning. The lethal dose of nickel varies according to the method of application. When given subcutaneously the physical condition of the compound influences the rate of absorption, and therefore relatively large quantities may be required; in rabbits the lethal dose is about 7½ mg. per kilo of body weight, and in cats it is about 12½ mg. per kilo. When applied intraperitoneally the absorbing surface is considerably larger, and consequently the minimal fatal dose is smaller, being less than 7 mg. for a rabbit. When applied in the form of nickel carbonyl vapour the conditions are still more favourable for rapid absorption, the fatal dose for rabbits being from 3 to 4 mg. per kilo, and for cats about 8½ mg. Nickel carbonyl is dissociated in the lungs, and a nickel compound, probably the hydrated subcarbonate, is deposited. The nickel is dissolved from the respiratory surface by the tissue fluids, and is then taken up by the blood and enters into complex combination with some constituent of the body. Some of the nickel finds its way directly through the lymphatic channels into the bronchial glands. The brain, the adrenals, and the lungs appear to exercise a selective absorption of the nickel which is brought in contact with them, but the poison only stays for a short time in these organs. The specific pathological changes produced are primarily a degeneration of the endothelial cells of the capillary vessels, and it is possible that some further primary action is exercised on the ganglion cells in the brain and on the parenchyma cells of the adrenals. As the result of fatty degeneration of the vessel walls, haemorrhages follow, and secondary changes result from the effects of the haemorrhages. The nickel is excreted by the kidneys and intestines. The method of poisoning with iron carbonyl is similar to that of nickel poisoning, but the amount necessary to kill in the former case is larger. Iron acts in a similar manner to nickel on the walls of capillary vessels, but the author has obtained no evidence of selection by any special tissues. Cobalt has a toxicological action which is identical with that of nickel, but the lethal dose is higher, though smaller than the lethal dose of iron. After the inhalation of a quantity of nickel or iron carbonyl greater than the minimum required to kill, no form of treatment was found to avert death.

167. Catalysis and Oxydasis in Normal and Carcinomatous Liver.

BLUMENTHAL AND BRAHM (*Med. Klin.*, January 3rd, 1909) take normal human liver, as fresh as possible, and equally fresh carcinomatous liver, and let them undergo autodigestion with chloroform water in an incubator at 37° C. The autodigestion mixtures are pipetted off after a fixed time, and the amount of oxygen set free from hydrogen peroxide—that is, the action of catalysis and oxydasis in the autodigested mixtures is tested quantitatively, as follows: A measured amount of H_2O_2 is added in excess to the autodigested liquid, removed with a pipette, and when the development of gas has quite ceased, the amount of unaltered H_2O_2 is determined by titration with a $\frac{1}{10}$ normal solution of $K_2Mn_2O_7$, dilute H_2SO_4 being added. Fresh carcinoma of the liver sets free a considerable amount of O from H_2O_2, but always decidedly less than normal liver. The amount of O set free decreases rapidly in carcinoma, while in normal liver it remains constant for many weeks. This corresponds with the rapid decrease in oxygen-liberating ferment action in the case of carcinomatous as opposed to healthy liver. Pieces of liver, macroscopically normal, were further examined in this way, and figures obtained which lay between those for normal and carcinomatous liver; this shows the influence of the diseased parts on the healthy by means of the ferment in question.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

168. The Parathyroid and Tetany.

UNDER the title of "the parathyroid gland and its relation to the pathogenesis of tetany," Bruno Glaserfeld sums up our knowledge with regard to the physiology of the parathyroid and to the symptoms produced by disturbances of its functions (*Berl. klin. Woch.*, January 18th, 1909). Sandström first described the parathyroid gland in 1880. Anatomically, the gland has been found to vary in size, shape, and position not inconsiderably. In man it is usually placed directly touching the posterior surface of the thyroid gland, toward the lower and median border of the lateral lobes, and therefore lies in close proximity with the oesophagus and trachea. It is usually rounded or flattened, and resembles a lymphatic gland macroscopically. Its colour is brownish-red. More than one pair of parathyroid glands have not yet been seen in man, but occasionally only one gland has been found. Apart from this gland, an internal epithelial body situated in the structure of the thyroid gland has been seen in some animals, but it appears to be doubtful whether this occurs in man as a normal condition. Histologically, the glands consist of epithelial cells forming a compact contiguous mass, without reticulum, merely separated by septa carrying the vessels, but at times well-marked connective tissue septa are met with. The cells are partly large epithelial cells, with well-developed nuclei, which stain intensely, and almost structureless protoplasm, and partly large epithelial cells with small nuclei, very sharp edges, and granular, well-differentiated protoplasm. The idea which Sandström first expressed—that the parathyroids were embryonal thyroid glands—has been disproved, and it is now almost certain that these structures are independent, and arise from the third and fourth branchial arches. With regard to the pathology of these glands, Schmorl has described amyloid degeneration and miliary tubercles affecting them. Haemorrhages in the glands as well as hyperplasia has been described in connexion with tetany, while necrosis, tumour, and other changes have been met with on rare occasions. The experimental removal of the parathyroids in animals leads to the development of tetany. If some parathyroid tissue is left, the tetanic convulsions are mild, and only last for a short time, while recovery soon takes place. Some observers have attempted to dispute this, but it may be stated that the dependence of tetany on operative disturbance of the parathyroids has been proved. It is wrong to speak of a *tetania strumipriva; tetania parathyreopriva* is the proper term. The parathyroid gland is absolutely necessary for life, and no animal has been kept alive after the complete removal of this organ. Its functions may be said to regulate the proper balance of the motor nerve function. Glaserfeld inquires into the question whether tetany is always produced by some lesion of the parathyroid gland. Tetany is known to arise, apart from operative removal of goître, in certain occupations, in acute infectious diseases, in pregnancy, in chronic gastric affections, and in early childhood. The idea that these forms are primarily due to an insufficience of the gland is accepted by many astute observers. Experimentally the tetany of pregnancy alone has been dealt with. Thaler has removed the parathyroids of a rat, leaving one-half of one gland intact. No symptoms were seen, but tetany occurred as soon as the animal became pregnant. This experiment has been repeated in various forms with similar results, so that it may be accepted that pregnancy tetany is due to insufficiency of the gland. Tetany of childhood cannot be experimentally studied, but it has been found in a large proportion of the autopsies that haemorrhages in the parathyroids was present. With regard to the other forms, one very significant fact is emphasized. Trophic disturbances, especially affecting the skin, nails, etc., are frequently met with in these cases, and similar trophic disturbances were described by Erdheim in experimental tetany. The author considers, therefore, that it is justifiable to regard human tetany as a condition which stands in relationship with affections of the parathyroid. So far no defined tetany toxin has been discovered, and, although various theories with regard to the way in which tetany is produced have been brought forward, no actual evidence in this direction is available. Tetany has been treated by means of animal parathyroid gland or some preparation of the same. Löwenthal, Wiebrecht, and MacCallum report on favourable results, while in tetany of childhood no benefit has yet been obtained.

169. The Sign of "Tapotage" in Pulmonary Phthisis.

IN 1904 Erni described a symptom which frequently exists in pulmonary tuberculosis. In certain cases percussion—above all in the subclavicular region—will excite immediate cough and expectoration. Molle (*Lyon Méd.*, February 7th, 1909) has observed this sign of tapotage in several cases, and disagrees with Erni's opinion that the sign is distinctive of a subjacent pulmonary cavity. He found it in one case of early tuberculous infiltration in which cavitation was extremely improbable, and was not shown by any other sign. On the other hand, "tapotage" is frequently absent where a cavity undoubtedly exists. Nevertheless, the sign is by no means without diagnostic value. Molle has found that it is associated with the neuro-muscular hemiparesis, such as Weil and Jacquet have described in pulmonary tuberculosis; it presents the same characteristic variability and inconstancy, and is due to a hyperaesthesia of the subjacent pulmonary parenchyma, the area of which is the same as the area of hyperaesthesia of the relatively superficial structures such as the muscles and nerves. The cough is, then, reflex rather than of mechanical causation.

170. Diagnosis of the Functional Capacity of the Kidney.

ZAGARI (*Rif. Med.*, February 22nd, 1909) points out that it is often more important to know whether a kidney is functioning adequately than to know whether it is diseased. A diseased kidney, like a diseased heart, may still perform its functions sufficiently well so as to be of less danger than a kidney less diseased but functionally uncompensated. Hence the importance of tests which may be relied on to indicate faulty function on the part of the kidney at early stages. The author has made trial of most of the recognized methods for his purpose, and briefly gives his experience. On the whole, he believes most may be learnt from a careful examination of the way in which chloride of sodium is eliminated. If the kidney is not working well there is almost certainly some retardation, or even retention, of the salt. In a healthy or compensated kidney salt is readily eliminated. In a definitely diseased kidney less than a quarter of the salt is eliminated, and this proportion holds good relatively in milder degrees of disease. In a healthy kidney the salt (meaning in every case a small excess over the normal diet) is quickly eliminated within the first hour, and the earlier the time the quicker the rate of elimination; all this is altered and retarded in kidneys that are not working well. This retarded elimination in diseased kidneys is a valuable indication. The author is alive to the fact that it may not be safe to test the total functional capacity of a kidney by the elimination of one particular solid constituent of the urine, but of the methods tried by him or suggested by others he has found his practically the most useful.

SURGERY.

171. Mobilization of Left Colon in Removal of Cancer of the Sigmoid Flexure and Upper Part of the Rectum.

JAVAILLON AND CHALIER (*Lyon Chir.*, Tome I, No. 4, 1909) describe at length a complicated operation which they have practised on the cadaver, with the expectation that in its application to the living subject it may enable the surgeon to avoid some difficulties, and also the inconvenient result with regard to a false anus, in the removal of large and adherent cancer of the sigmoid flexure and the upper part of the rectum. It has been found by the authors that it is anatomically possible to drag down through a perineal wound the whole of the sigmoid flexure, and to attach the lower part of the descending colon to the margin of the skin wound in this region, after having mobilized the whole of this portion of the intestine. In the first and abdominal stage of this operation the descending colon, together with the splenic

and sigmoid flexures, is, after exposure by left lateral laparotomy, rendered free and floating like small intestine by careful section of the suspensory ligaments of the splenic flexure, of the peritoneal investment along the outer margin of the descending colon, and of the mesenteric attachment of the sigmoid flexure. In the second stage, following complete closure of the abdominal wound, the coccyx is resected and the rectum set free by the usual perineal operation. The sigmoid flexure, and, indeed, most of the descending colon, can now be drawn into the wound. After removal of the growth the lower end of the divided colon can be sutured to the margin of the anus or to that of the rectum, if the lower portion of the gut can be saved. The performance of this operation may, the authors believe, be justified from a physiological point of view by the following considerations: It is a fact that at the present time very extensive resection, and even complete occlusion, of the large intestine may be practised without causing any serious inconvenience. In the second place, the different manœuvres of loosening the attachments of the splenic flexure and the descending portion of the colon are not accompanied by any vascular division capable of impairing the vitality of this portion of the intestine. Perineal displacement of the descending colon does not exert on the blood vessels of this portion of intestine such a degree of traction as might interfere with or even seriously compromise its nutrition. Finally, steps taken before closing the abdomen to fix by sutures the loose and depressed portion of colon would serve to prevent any flexure or faulty position that might ultimately cause any mechanical troubles of the intestine and symptoms of obstruction. This proposed method of dealing with recto-sigmoid cancer is not likely, it is held, to be more severe than the combined abdominal and perineal operation now usually practised in such cases, and it has the great advantage over the latter of saving the patient from the infirmity of an artificial anus in the groin.

172. Endoscopy in Cicatricial Stricture of Oesophagus.

GUISEZ (*Bull. de la Soc. de l'Internat. des Hôpitaux de Paris*, No. 9, 1908) reports very favourably of oesophagoscopy as an aid to the direct treatment of cicatricial stenosis of the oesophagus. By exposing to view the seat of obstruction the surgeon is enabled to deal with any diverticulum that may exist, to find the entrance to the stricture, which has often an eccentric situation, and to treat with good prospects of success a narrow constriction that could not have been dealt with by ordinary means. A very fine bougie having been passed through the stricture under oesophagoscopic control, the further treatment in the author's practice consists, according to the nature and extent of the lesion, either in gradual dilatation, in section of the stricture, or in dilatation by electrolysis. The author describes the results of his treatment in 31 cases of narrow and difficult oesophageal stricture, in 6 of which gastrostomy had been performed. In 25 cases he has succeeded in restoring the calibre of the oesophagus, and in rendering the patients capable of normal or almost normal alimentation. In the cases in which the treatment failed the stenosis was complete, or the author was unable to find the very minute entrance to the stricture. The results obtained in the successful cases are regarded as complete and durable, several patients having passed over intervals of from two to three years without presenting any signs of relapse. The prognosis is better in cases of recent stricture than in those of stenosis of long duration in which the cicatricial tissue is tough and fibrous. The most favourable cases, it is pointed out, are those of short and valvular stricture. Multiplicity of the strictures is not an obstacle to endoscopy, provided each be dilated successively. Long strictures with longitudinal infiltration of the oesophageal walls are very difficult to traverse, and, even if permeable, necessitate for their treatment frequent endoscopic sittings. The author holds that his results have been very satisfactory, as they indicate that a cure can be effected in 80 per cent. of cases in which gastrostomy is the only alternative.

173. Iodoform Amblyopia.

M. ROCHON-DUVIGNEAND brought a case before the Paris Ophthalmological Society (*Recueil d'Ophtal.*, November, 1908) in which symptoms of retrobulbar neuritis followed the injection of 20 c.cm. of glycerine emulsion of iodoform into a psoas abscess. Eight or ten days later the patient began to taste iodoform and have a smell of it in his nose. He had a heavy feeling in his head, but no vomiting or vertigo. Thirty-seven days later amblyopia came on. A double optic neuritis was present, with later a central scotoma for green and red. There was also some peripheral contraction of the fields for these colours. Valude and Terson have published similar results from saturation with iodoform. Both these cases resulted in permanent partial optic atrophy. Sauvineau, during the discussion which followed, stated that he had had a similar case in his practice.

OBSTETRICS.

174. The Induction of Premature Labour.

IN order to determine which method is the best for inducing premature labour, Otto von Herff (*Muench. med. Woch.*, December 15th, 1908) first considers what results have been obtained by hebosteotomy at full time; 664 cases published were found to be available for this purpose. Of these, 4.9 per cent. of the mothers and 9.6 per cent. of the children died; and even when the mothers recovered it was found that a considerable proportion of those examined at a later date showed serious disturbances, which could be ascribed to the operation. In comparing the conditions applying to induced labour, he states that the maternal mortality is less than 1 per cent., although that of the children is 20 per cent. Bumm has succeeded in diminishing the infantile mortality to 13.2 per cent., but at the same time maternal mortality rose to 1.9 per cent. He believes that hebosteotomy must disappear from the list of operations of selection, and only be retained for those cases of urgent necessity in which no doubt exists that the method is sufficient for the case. Every general practitioner should be able to induce premature labour with safety, but, inasmuch as the unfavourable conditions of the private house with regard to antisepsis and asepsis as compared with the clinic might affect his results, it is necessary to introduce the simplest method of inducing labour, in order to keep the maternal mortality as low as possible. The simplest method, undoubtedly, is rupture of the membranes. It is rapidly performed; the armamentarium required is limited to a suitable membrane "Sprenger" (the ordinary pointed probe may be insufficient), and it never fails. As a rule the pains set in after from six to twelve hours, while occasionally a somewhat longer interval may intervene. The patient is kept in bed during this period, and in some cases vaginal douches should be given. No further interference is required, so that the risk of infection becomes almost nil. Von Herff gives the statistical results obtained in his clinic by inducing labour prematurely by rupturing the membranes. Among 12,400 births, 5.7 per cent. were so induced. The pain set in on an average eighteen hours after the rupture. The birth itself usually occupied a shorter period than at full time. Only in 3.9 per cent. of the cases were the pains "too weak." *Part-partum* haemorrhages were not more frequent than when the birth took place spontaneously at full time. The placenta had to be artificially assisted in rather more cases than is usual, but this is probably due to the fact that the induction of premature labour was performed for contracted pelvis. Prolapse of the cord was met with nine times. The infantile mortality was 2.8 per cent. Turning to the condition of pelvis for which premature labour had to be induced, he finds that in 4 cases osteomalacia was present, in 3 cases there was a "filter" shaped pelvis, and in 1 case each there was a transversely contracted, a coxalgic obliquely, and a kyphotic obliquely contracted pelvis. In all the rest there were simple flattened, general contracted, or general irregular contracted pelves. The conjugate measured from 7½ cm. to 8½ cm. in 73 per cent. of the cases. More important was the estimation of the actual size of the inside of the pelvis in relation to the fetal head. The labour was induced at or after the thirty-fifth week whenever this was possible. Out of 100 such births undertaken by the author at the lying-in hospital one woman died; all the other mothers recovered. Of the 100 children of these mothers, 85 were born alive, while 5 died during the early days of their lives. The remaining 80, however, left the hospital in good condition and with an excellent prospect of life. He compares these results with the results obtained in contracted pelves when the labour was allowed to go to full time; 68 mothers brought their babies into the world without further help, but 30 per cent. of these babies were lost. Forceps were used in 30 per cent. of the cases, with an infantile mortality of 36 per cent.; version yielded an infantile mortality of 76 per cent., while all the operative-born children taken together included 55 per cent. dead children. The whole series showed a loss of infant life to the extent of 45 per cent. This, he claims, speaks

most eloquently in favour of inducing premature labour by rupturing the membranes according to Scheel, at the proper time, for contracted pelvis.

GYNAECOLOGY.

175. Laparo-colpohysterotomy.

A. DÜHRSSEN records a new method of dealing with labour complicated by contracted pelvis (*Berl. klin. Woch.*, February 1st, 1909). The means hitherto at our disposal in such cases have been summed up by Hegar as boring a hole in the head of the fetus, or slitting up the mother's belly, both of which he considers to be inhuman and rough. Sawing through a pelvic bone in the mother is not less objectionable, and should not be performed. Hegar further considers that the classical gynaecological operations are forceps, version, and Dührssen's vaginal Caesarean section. The author agrees that symphysiotomy and pubiotomy will disappear from the list, but he thinks that a new operation—which his assistant, Solms, has devised—will replace it. This is a combination of Ritgen's gastro-elytrotomy and vaginal Caesarean section. This operation was performed on a 3-para, whose conjugata vera measured 10 cm.—that is, nearly 4 in. She had lost her two babies during the former births. At the end of pregnancy, after dilating for one hour with a bag, an incision was made above Poupart's ligament on the left side, through the abdominal muscles and fascia transversalis. The bladder was then pushed forward, and the peritoneum was separated from the uterus and pushed upwards. In this way the lower uterine segment was exposed. Very little haemorrhage was experienced, as the inferior epigastric artery was tied in two situations and divided between the ligatures. The next step consisted in incising the anterior vaginal and cervical wall in the manner of anterior colpohysterotomy. The child was lying in the first vertex position. Forceps were applied through the flank wound, and the child was easily delivered through the two openings—that is, that in the vagina and cervix and that in the flank—alive and well. The placenta was expressed *per vias naturales*. Then the vaginal-cervical wound was closed through the vagina, and the flank wound was suture in several layers. The wounds healed by first intention. The uterus underwent a normal involution, and was found three weeks after to be anteflexed, as against a slight retroflexion which was present early in the pregnancy. In discussing the operation, Dührssen states that it was actually extraperitoneal, although the medial incisions do not permit of extraperitoneal access to the uterus. The peritoneum is considerably less firmly fixed laterally than it is in the middle line. No raising of the pelvis is required, so that the danger of air embolus is not present. He mentions that it can be undertaken on any table, and does not need a special operating table with mechanism for tilting the patient upside down. An excellent drainage is provided by the vaginal hysterotomy. Since many cases of contracted pelvis are not seen by the surgeon until attempts have been made to deliver, and since these attempts include the introduction of the faultily disinfected hand into the genital canal, a considerable proportion of the cases will not be free from some infection, and for this reason good drainage is of paramount importance. He further discusses in some detail the advantages of his operation over Frank-Sellheim's Caesarean section. E. Solms adds a short description of the operation itself, and deals with the technique of the same.

THERAPEUTICS.

176. Karell's Milk Cure.

L. ROEMHELD (*Monatsschr. f. d. physikal.-diätetischen Heilmethoden*, January, 1909) describes Karell's milk cure, with its modifications and the widened indications for its use. Karell in 1865 reported on 200 cases in which he had employed a milk cure for the purpose of unloading the system generally and especially the circulatory organs; his method was to administer the milk at first three or four times a day, later at four-hourly intervals, the quantity allowed being half or a whole coffee-cupful of skim milk to be taken in sips. Recently Jacob has given a report of Karell's cure as systematically employed by Lenhartz during fifteen years in the treatment of chronic bronchitis, of heart disease with failure of compensation, and of obesity with an overtaxed heart. Under Lenhartz the patient was absolutely at rest in bed, and for the first five to seven days of treatment received four times a day 200 c.cm. of milk. During the next two to six days an egg, *Zwieback*, and later minced meat and vegetables, etc., were added, so that after about twelve days there was a return to a full mixed diet. During the treatment special attention was given to securing a regular evacuation of the bowels. In cases where the heart had sufficient reserve power the effect of the treatment was seen in greatly increased diuresis, in loss of weight, and in re-establishment of cardiac compensation; in some cases it was advisable to administer digitalis during the period. Where the cure failed it was, as a rule, a sign of advanced degeneration of the cardiac muscle. Roemheld and also Moritz, without knowledge of Karell's cure, have recently recommended milk cures for obesity. Roemheld arrived at the treatment from a consideration of the diuretic action of a salt-free diet. He puts his patients on to milk for two or more days of each week throughout the whole cure; on "milk days" he allows 1,000 to 1,200 c.cm. of milk; on other days a mixed diet such as to afford two-fifths to three-fifths of the necessary calories. The diet is especially suited for patients suffering from heart disease, gout, or nephritis. The "milk days" are especially effective at the beginning of a cure where there is failure of compensation. At the end of a cure a patient may keep his weight down for an indefinite time if he will continue to have two of the "milk days" each week. Moritz goes further than Roemheld, and recommends a pure milk cure to be continued for weeks. On his system the amount of milk required is calculated on the normal weight of the patient, and varies from 1¼ to 2½ litres a day. Moritz claims that the cure is the simplest one for obesity; the patient loses on an average 200 grams of weight a day without suffering from thirst or great hunger. As a rule the patient can go about his work during the cure, but he must be under medical observation. A consideration of Karell's original cure suggests that its good effects are due, first, to the sparing of the heart as a result of underfeeding and rest, and, secondly, to the diuretic action of the milk with its small percentage of NaCl. Roemheld would therefore recommend the original cure in cases of failure of compensation, whether as a result of heart or kidney lesion or of chronic bronchitis. In cases of obesity he would combine his own and Moritz's cure, beginning with a pure milk cure, and later, in order to avoid monotony, going on to a mixed diet of lower than normal caloric value with the systematic use of certain "milk days" each week; when the cure is ended he would still recommend the "milk days" as a means of making the results of the cure more lasting. Emphasis is laid on the fact that any cure for obesity which involves underfeeding should be carried out under medical supervision and should be adapted to the individual case.

177. Veronal Sodium.

H. WINTERNITZ points out that Merck and Bayer, who manufacture veronal, have brought out a sodium diaethyl barbiturate, which they quite properly call "sodium veronal," while Schering produces the same combination under the artificial name of *medinal* (*Muench. med. Woch.*, December 15th, 1908). This double patenting of the same substance reveals a peculiarity of the German patient law. Sodium veronal is far more soluble than is veronal, 1 part of the former being soluble in 5 parts of cold water, while 1 part of the latter is only dissolved in 145 parts of cold water. The author states that sodium veronal is split up in the acid contents of the stomach into veronal, but on reaching the alkaline intestines the sodium salt is again formed. The only advantage of the sodium salt over ordinary veronal is therefore its solubility, but since the stomach usually contains sufficient fluid to dissolve a dose of veronal, the rapidity of action is usually the same in both cases. When administered per rectum in the form of suppositories, the sodium salt has advantages over veronal, but the action is not reliable. Applied subcutaneously or intramuscularly, sodium veronal is rapidly absorbed. The author has given it in 10 per cent. solution, of which he injected from 5 c.cm. to 10 c.cm. He was unable to try the hypnotic effect in cases of excitement or intractable sleeplessness, but in cases of sleeplessness following sciatica and intercostal neuralgia, he gave both forms of injection, and was surprised to find that the hypnotic action was very slight. Sleep only set in after from three to four hours, was not deep, and only lasted for a short time. When applied intramuscularly during the daytime, no hypnotic effect appeared at all; ½ gram of sodium veronal given internally acted more powerfully in inducing sleep than 1 gram given subcutaneously. On the other hand, in neuralgic pains, the intramuscular injections acted exceedingly well in relieving the pain. This he was able to test in six cases of sciatica and one of alcoholic intercostal neuralgia. He

points out, however, that we possess local anaesthetics which are more powerful and better adapted to local pain-stilling. He concludes by relating the rough data of some experiments which, in his opinion, show that the respiratory centre requires a considerably more powerful stimulation to produce increased work during sleep (including hypnotic sleep) than in the waking condition. The diminution of the respiratory activity during sleep is produced by a diminution or cessation of sensory and psychic stimuli on the centre as well as by a diminution of the excitability of the respiratory centre. This applies to sleep induced by veronal, amylene hydrate, chloral hydrate, etc., as well as to natural sleep.

178. Neuroprin.

Roasenda (*Gazz. degli Osped.*, No. 21, February, 1909) has noticed good results in the treatment of certain convulsive types of nervous disease by means of neuroprin, which is an extract of nervous tissue, and has been compared to digitalis in as far as its tonic action on the nervous system is concerned—as digitalis is a cardiac tonic, so neuroprin is a specific nerve tonic. The author has used the drug with success in epileptics, in epileptoid attacks, in neurasthenia (especially when marked by insomnia, mental and physical excitability followed by speedy exhaustion), in Graves's disease, and in one case of paralysis agitans. From his experience he believes that neuroprin is a good nerve sedative and tonic, and may in certain cases prove a useful substitute for the bromides and other cortical sedatives. He has not observed any ill-effects from its use.

179. Atoxylate of Mercury in Spirochaetal Diseases.

Uhlenhuth and Manteufel (*Mediz. Klinik*, October 25th, 1908) have found the mercury salt of p-amido-phenyl-arsenic acid, or mercury atoxylate, more efficacious than either mercury or atoxyl alone in the treatment of syphilis. (1) Mercury atoxylate, given in a single injection in doses well below the toxic, kills fowl spirochaetes in the organism with certainty. A single intramuscular injection affords sure protection against subsequent infection by fowl spirochaetes, even when this occurs only one or two days afterwards. (2) In the treatment of syphilis in rabbits, mercury atoxylate has shown itself superior to all other mercury and atoxyl preparations. A single injection in all Uhlenhuth's and Manteufel's cases caused the disappearance of severe corneal syphilis in from five to six days. So far relapses have not been observed. (3) The preparation acts also on the spirochaetes in the recurrent infection of rats. The slight resistance of rats towards the preparation makes a true judgement difficult. The application of this preparation to monkeys and human beings will further elucidate its efficacy. (4) In trypanosome infections (dourine, sleeping sickness) the preparation has a good effect. The introduction of mercury into the atoxyl group seems to raise in a very marked manner its spirochaetal-destroying property. (5) In a test tube the preparation is distinguished from atoxyl by the fact that, though it is with difficulty soluble in water, it rapidly kills trypanosomes and spirochaetes. The surprising results in rabbit syphilis induced the writers to recommend mercury atoxylate in the local and general treatment of human syphilis; they hope by this preparation to simplify and accelerate treatment, and suitable trials are already being carried out.

PATHOLOGY.

180. The Development of Sarcoma after Transplantation of a Carcinoma.

Bashford, Murray, and Haaland recently described the development of a sarcomatous tumour out of carcinoma of a white mouse. Ehrlich and Apolant have also been able to describe this phenomenon in their mice. Loeb has been able to observe a similar alteration in the type of growth, and reports briefly some of the more important points in connexion with this case, while he reserves the full description together with the microscopical appearances for a future publication (*Deut. med. Woch.*, January 1st, 1908). The case was one of an adeno-carcinoma of a Japanese mouse, thus differing from the other cases which affected white mice. The primary tumour was characterized by the plentiful presence of vacuole cells. The primary tumour was situated in the submaxillary gland. At first there was no reason for regarding the tumour as a mixed tumour, and it was only after the successive inoculation that the type changed to that of a sarcoma. The sarcomatous type appeared first in the second generation, which proves that the change was not due to a stimulus which arose after the repeated transplantations or to an increase of virulence obtained by several passages. The sarcomatous element was found in all the replanted tumours which were obtained from the first sarcomatous tumour. It therefore appears that the sarcoma formation does not depend on a constitutional peculiarity of the animal into which the tumour is grafted, nor does it depend on any accidental circumstance in connexion with the transplantation. Loeb shows that such a transformation does not require a special virulence of the original carcinoma; indeed, he finds that considerable variations in the inoculability of the tumours have been met with. In his series he obtained 100 per cent. of successful implantations, as against the 50 per cent. which Bashford and his colleagues obtained. He argues that the development of sarcoma depends on the overgrowth of the connective tissue of the animal into which the tumour is implanted. In support of this he states that in his cases, in the first generation, he found that the connective tissue of the implanted growth showed degeneration, while the epithelial elements proliferated. At the time strands of newly-formed connective tissue were seen which stood in direct connexion with the connective tissue of the host. Further, he found that the sarcomatous elements were situated at the periphery of the growths and not among the carcinoma nests. In some of the tumours of subsequent generations he found three types of growth: (1) Large sarcomatous growths situated apart from large carcinomatous growths in the same animal. (2) The sarcomatous tissue invaded the carcinomatous growth. (3) The growth was chiefly sarcomatous, but small nests of carcinoma were included in the tumour. He proceeds to describe certain changes which were met with in the structure of both elements. The chief changes in the carcinomatous portions consisted in the decrease and eventual disappearance of the vacuolated cells. As far as the sarcomatous elements were concerned, here again he found that the structure tended to become much more simple. At first there was a well-marked polymorphous character of the cells, but this was absent in subsequent generations. He found that while the first sarcomatous tumours tended to grow slowly, later on the transplanted tumours became more rapid in their growth, and, speaking generally, he states that quick-growing recurrent sarcomatous tumours were richer in cells than the slow-growing primary sarcoma. While he realizes that one is not in a position to explain the occurrence of sarcomatous elements after transplantation of carcinomata, he suggests that it is possible that some micro-organism may be transferred from the epithelial cells to the connective cells. This theory would not clash with the finds of the other workers, but it must be understood that so far it is a mere hypothesis.

181. Ichthyosis Fetalis.

Coston (*Amer. Journ. Obstet.*, October, 1908) has published a report of another case of this disease, issued almost at the same time as Henneberg's paper in the *Ann. de Gynéc. et d'Obstét.*, September, 1908, with a good synopsis of earlier literature on the subject. In Coston's case the parents were a healthy country couple, the father aged 21, the mother 17, a primipara; they lived in a salubrious district near Birmingham, Alabama, and all their antecedents and surroundings were satisfactory. Pregnancy speedily followed marriage. In the fifth month, when the patient was in perfect general health, and free from pain, a copious sero-sanguinolent discharge set in. The uterus was as big as it normally is in the seventh month; the fetal heart sounds were audible. Coston suspected twins, as both parents had twin brethren. He applied the tampon when an attack of flooding occurred. Seven days later labour came on, the breech presenting. Delivery was easy; the membranes were preserved intact until the breech was passing the vulva, when they ruptured spontaneously. A considerable portion of the placenta was torn off by the advance of the head. The fetus made feeble attempts to breathe. The placenta was of enormous dimensions, a fact which accounted for the great distension of the uterus, and for the haemorrhages; it extended from the fundus almost to the os internum, and measured 3½ in. at its thickest part. Ichthyotic patches were detected on the surface of the umbilical cord, and on the amnion, which was of extreme thickness. During delivery, Coston noticed that the fetal limbs were rough and scaly. The fetus was covered from head to foot with characteristic rough scales, separated by fissures. The feet and hands were clubbed, and the nose and eyes deformed; there were no abnormalities in the ano-genital region. The thickening of the skin caused considerable rigidity of the trunk and limbs.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

182. Cancer of the Stomach.

IN a clinical lecture, L. Kuttner (*Deut. med. Woch.*, January 14th, 1909) estimates the value of the various signs and symptoms associated with gastric carcinoma, and gives indications for making a correct diagnosis. In a large number of cases no difficulty in diagnosis presents itself; but cases not infrequently occur in which the opposite holds good. The fact that the only chance for the patient lies in an early diagnosis, during a time when operative treatment is still possible, renders it imperative for the general practitioner to be in a position either to make the diagnosis himself, or at all events to be suspicious of the nature of the disease, and therefore call on the specialist to confirm or refute his suspicions. While cancer of the stomach may give rise to no symptoms until a sudden haemorrhage—either in the form of haematemesis or melaena—appears, the vast majority of cases show an insidious onset, and usually present the symptoms of acute dyspepsia or chronic catarrh of the stomach. The course at first may be extremely gradual, and the most marked symptom is the loss of appetite, together with a dislike to certain forms of food (usually meat). This symptom is important, although it must be recognized that some cancer patients retain their appetite until the end. Next Kuttner deals with the general predisposition. Age is an important factor, but young persons are not immune from the risk of the disease. He does not consider that heredity has anything to do with the disease, since this would only apply in about 6 to 7 per cent., and in so common a disease it is not surprising that several members of a few families should suffer from the same disease. Trauma, in his opinion, only plays an unimportant rôle in the etiology of the condition. Gastric ulcer is said to predispose to cancer. The same is said of troubles, excitement, mental depression. Kuttner regards these conditions as important in affecting the general state of nutrition, and suspicion of cancer should be aroused, especially when associated with severe anaemia. Intractable itching of the skin at times is noticed before a tumour is palpable. Multiple angiomata of the skin, on the other hand, have no diagnostic significance. Rarely the swelling of the left supraclavicular lymphatic glands may indicate a masked gastric cancer. Ill-smelling eructations and the vomiting of "coffee grounds" material are important symptoms. Fresh blood in the vomit need not indicate cancer. With regard to pain, he warns the practitioner against placing reliance on this symptom in forming a diagnosis. The palpation of a tumour naturally is of great importance, but in a large number of cases the tumour is not palpable, even when it has attained a considerable size. Visible peristaltic movements or antiperistaltic movements, including the so-called "stomach stiffening," are valuable diagnostic signs. He then turns to the examination of the secretion and motility of the stomach. Neither the absence of hydrochloric acid nor the presence of lactic acid are specific. When there is well-preserved motility, the HCl is usually diminished, lactic acid is not present, and neither lactic acid bacilli nor sarcinae are to be found. When the motility is insufficient, free HCl may be present, lactic acid is absent, but sarcinae are present, or the free HCl may be entirely absent, and there will be lactic acid fermentation. The presence of pus or purulent material in the empty stomach, provided that other sources of suppuration are sought for and excluded, is in favour of carcinoma. Particles of malignant tumour may be caught up in the eye of the stomach tube. The presence of amoebae and flagellates in the mucus from the fasting organ is regarded as an early sign. The same applies to the discovery of a fluid containing considerable quantities of albumen. Left-sided pleurisy should always cause the practitioner to think of a gastric tumour. *X* rays may also prove valuable in the early diagnosis. Kuttner also deals with the treatment of inoperable carcinoma of the stomach. He disposes of Adamkiewicz's cancroin, Doyen's serum, radium, Keating-Hart's fulguration, etc., in a few words by stating that none of these methods can do any good. The results of trypsin treatment is summed up by recording that no cure has been effected. It thus appears that no curative treatment is available at present. Symptomatically the regulation of the diet, the improving of the appetite by means of condurango bark and other drugs, the combating of vomiting by iced effervescent drinks, cocaine, chloroform, or morphine, and by washing the stomach out, the cautious treatment of diarrhoea and constipation, and a few other similar means may render the lot of the unfortunate sufferer tolerable. Nothing more can be done.

183. Human Contagion the Cause of Infantile Tuberculosis.

COMBY (*Arch. de Méd. des Enfants*, March, 1909) says the theory that tuberculosis is hereditary has been revived by some who hold that a predisposition is inherited. The disease has been observed to be transmitted to the fetus from a mother in an advanced stage of phthisis, by way of the placenta, but carefully compiled statistics have proved that this is very exceptional. The theory of an inherited predisposition is based on well-known facts wrongly interpreted. Predisposition is supposed to be recognized by certain signs—pallor, thinness, a narrow chest, enlarged glands. But these stigmata are not peculiar to children of tuberculous stock; they are found in others when they have been exposed to contagion. These stigmata are not signs of predisposition, but the results of infection; the children have the disease in a latent form, and have been contaminated at an early age. Thanks to the tuberculin test and Calmette's reaction it is now possible to prove that these children have the disease. Henceforth it can be said that the disease (with rare exceptions) and the predisposition are not inherited. If a child born of a phthisical mother, in the last stages, is at once removed from the danger of infection, that child will grow up strong and robust without developing tuberculosis; but if it remains with the infected family the contagion will prove fatal. In the same family some children react to tuberculin while others do not; those who react have been infected. The evidence of autopsies for the last fourteen years shows an increase in the number of tuberculous children in accordance with age. The disease nearly always makes its first appearance in the bronchial glands. In 216 autopsies in infants less than 3 months old there were 4 tuberculous; in 1,012 autopsies in infants under 2 years there were 253 tuberculous. The percentage works out thus: 43 per cent. between 1 and 2 years; under 1 year, 16 per cent.; between 3 and 6 months, 18 per cent.; between 6 and 12 months, 27 per cent.; after the second year the proportion reaches 67 per cent. Twenty-five years' experience has led Comby to the conclusion that in the majority of cases infantile tuberculosis is due to family contagion, and the bacillus is not introduced through the milk, but inhaled. The basis of this conclusion is the fact that there has been no diminution in the disease during the last twenty years, although every endeavour has been made to occlude infection from tuberculous milk by eliminating diseased cows, and by sterilizing the milk. The theory of human contagion is supported by the fact that tuberculous children are only seen in tuberculous families. Comby has never seen a case of infantile tuberculosis caused by milk. By all means let the milk be boiled, but this is useless unless means can be taken to protect the child from human contagion. The author has seen numbers of children die of tuberculous meningitis because they were not protected from the caresses of their diseased grandparents. As adjuvants in preventive treatment, Calmette's eye test and von Pirquet's skin test should be used; these are inoffensive and easy of application.

184. Endemic Appendicitis.

SAXLUND (*Tidskrift for den Norster Laegeforening*, No. 5, 1909) describes an endemic occurrence of appendicitis in a country district in Norway extending for about 3 to 4 kilometres. Sixteen cases had been personally treated from October, 1908, to February, 1909, and another 10 cases had been reported to him. They occurred mostly in young women about the age of 20, and the symptoms were mild. The majority had been operated on with good results. There was no evidence of case-to-case infection, but everything pointed to a common cause. Saxlund is inclined to attribute the occurrence to the ingestion of bad foodstuffs, and is having specimens of flour from several shops examined.

SURGERY.

185. Bilateral Ligature of the Internal Jugular Vein.

DUVAL, in a communication to the Société de Chirurgie of Paris (*Bull. et Mém.*, No. 7, 1909), directed attention to a case in which, in the course of a preliminary operation for removal of the glands of the neck, before dealing with a cancerous growth of the lower jaw, he found it necessary to resect on both sides the internal jugular vein. This sudden and simultaneous suppression of the two main channels for the return of blood from the brain, though immediately followed by intense congestion of the face and neck and by temporary arrest of breathing, did not lead to any fatal results or interfere with the subsequent satisfactory progress of the patient. In a report on this communication, Morestin referred to two fatal cases under his own observation, which show that while ligature of the internal jugular vein on one side of the neck is a harmless procedure, simultaneous occlusion of both these vessels, on the other hand, is a very serious step, which should never be taken except in case of absolute necessity. If such necessity be enforced by the depth and extent of the cancerous glands on both sides of the neck, the danger attending bilateral ligature may, it is suggested, be diminished or abolished by recourse to certain precautions or to some supplementary operation. The vein should be occluded very gently and gradually, and the venous occlusion be associated with ligature of the internal carotid or with temporary compression of the common carotid. It might be found practicable to effect an anastomosis between the internal and the external jugular or to reconstruct the former by vascular interposition.

186. Accidents in Hernia Operations.

ERDMANN (*Annals of Surgery*, February, 1909) points out that among the dangers to be avoided during an operation for the radical cure of hernia, especially by the Bassini method, are to be included, in addition to wounding of the vas deferens and bladder, wounding also of the bowel and the large blood vessels. An inquiry made among members of the New York Surgical Society elicited two instances of injury to the bowel, one in a large sliding or slipped hernia, in which the sigmoid was opened and subsequently sutured without any bad result. In the other the sigmoid had been evidently included in one of the deep sutures, as a faecal fistula developed soon after the operation, and persisted for several weeks, with eventual repair without secondary operation. Injuries to the femoral vessels in Bassini's operation on inguinal hernia are attributed to several important factors, among which are: (1) An anomalous distribution of the branches; (2) the needle; (3) the suture material as a contributory rather than a primary cause; (4) the method of passing the needle from above or from below; (5) too free exposure of the ligament. The arterial branch most likely to be wounded is the superficial epigastric. The author objects strongly to the use of a large curved needle with sharp edges, and holds that safety will be enhanced by substituting for Hagedorn's needle one that is round. Theoretically there is less danger in passing the needle from above downwards than from below upwards, but the author believes that if Poupart's ligament be grasped and held well upwards, it is not important how the needle is passed. The suture material should be soft and pliable, not stiff and wiry. With regard to the treatment of the injured vessel, if this be the femoral vein the surgeon can ligate laterally, or should the opening be too large for ligature, suturing can be practised more readily than in cases of arterial injury. If the artery be the wounded vessel, lateral ligature is out of the question, and either arteriorrhaphy or ligation above and below the wound must be practised.

187. Foreign Bodies in the Eye.

BEAUVOIS (*Recueil d'Ophtalmologie*, September, 1908) points out that by far the largest number of workmen who seek compensation for loss of sight have suffered, not from violent accidents, but from small foreign bodies, such as a piece of steel, which have infected the cornea and caused ulcers, which have left large leucomata and consequent loss of useful vision. Nor is the cause an obscure one. When a mechanic gets a piece of steel or emery into his cornea he does not at once seek medical aid; in most factories there is a man, who may or may not have gone through an ambulance course, who proceeds to scrape out the offending body with a foul match or a filthy "magnetized penknife"; in these advanced days he even puts in a cocaine pellet. The patient then probably goes back to work without even a protective bandage. If he use a lotion at all, it is probably not the usual boracic acid solution, but his own urine. Even when the workman seeks medical help it is generally only when the "works' doctor" has failed to extract the foreign body, but has not failed to denude a large area of the cornea of its superficial epithelium; nor does he as a rule succeed in introducing the prescribed lotion or ointments into his eye. Beauvois thinks that in every case, even the most trivial, of abrasion of the cornea the eye should be bandaged for two days, and here all ophthalmic surgeons will agree with him. Especial attention must always be given to the lacrymal apparatus, for if there be pus in the lacrymal sac infection of the cornea is almost certain; but above all, when there is evidence of infection having already occurred, should the patient be admitted to a hospital, then alone is it certain that treatment will be carried out efficiently, and the simplest methods will often then give excellent results. If the patient refuse to undergo efficient treatment he should lose his compensation.

OBSTETRICS.

188. External Version.

IN spite of the ever-increasing extension of operative obstetrics which signalizes the midwifery of to-day, as it is taught in the large German clinics, A. Labhardt (*Muench. med. Woch.*, January 12th, 1909) states that von Herff realizes that simplicity is a golden rule in midwifery, and for this reason attempts to reduce the number of large operations to a minimum in the Basle clinic, and to employ and teach the simplest and least severe manipulations which can be regarded as safe. Among other simple methods, external version is resorted to where it can be applied with a fair chance of success. External version was recommended by Weigand over a hundred years ago. The author considers that internal version should never be attempted until external version has been fairly tried. There is no doubt at all that the danger of introducing the hand into the genital passages increases in direct proportion to the depth to which the hand is passed. Since internal version requires the operator to pass his hand far into the cavity of the uterus, the morbidity is relatively high. On the other hand, if version can be performed without passing the hand into the uterus at all, the morbidity must remain the same as that of normal births. The second advantage is the fact that an anaesthetic need not be given. He realizes that the danger of ether or chloroform in the hands of a practised anaesthetist is small, but in general practice the practitioner usually finds himself without assistance other than the midwife or "nurse," and he is forced to hand the chloroform bottle over to this unskilled individual. He points out that it is usually possible to convert a transverse presentation into a vertex presentation by means of external version alone. In a small number of cases this may prove impossible, and then the obstetrician can still perform podalic version by the external method. The last advantage which he mentions is that it is possible to turn by this method at all stages of labour, even when the os is still undilated. Against all these important advantages certain disadvantages must be mentioned. First of all, he states that unfortunately external version is not always possible. Next, there is a risk of prolapse of the cord or extremities of the fetus. This risk can be minimized by a proper impression of the head and by allowing the "waters" to drain slowly away. In 63 external versions he experienced a prolapse of the cord 3 times only. The indications for external version are found in all forms of transverse or oblique presentations. When a rapid delivery is required for the safety of mother's or child's life, cephalic version may not be undertaken, but podalic external version saves the insertion of the hand into the uterus. No anaesthetic is required, and all that is necessary is to bring down a leg after the child has been turned. External version is only admissible when the fetus can be clearly felt through the abdominal walls, and either end can be moved in any desired direction. A dead fetus cannot be turned from without, since it lacks the necessary rigidity. As a rule, the turning by this method depends on the intact condition of the membranes. It is, however, possible at times to turn after the membranes have ruptured and the liquor amnii has escaped. In a fair proportion of cases in which Labhardt has carried out this method hydramnion was present. An excessive supply of liquor tends toward the production of transverse presentation, and it is therefore especially when hydramnion is present that external version will be valuable. When the amount

of liquor is very excessive, it is wise to puncture the membranes and to allow some water to drain away, so that the fetus can be readily palpated and the risk of prolapse of the cord is diminished. Believing that a breech presentation is never an advantage in contracted pelves, he cannot support the so-called prophylactic version. External cephalic version should always be attempted, even when the degree of contraction is comparatively severe. External cephalic version should, however, not be attempted when there are conditions existing which call for a rapid termination of the birth. These include eclampsia, dangerous illness of the mother, asphyxia of the child. In these conditions external podalic version should be performed, and a leg should be brought down later. With regard to the technique of the method, he has little new to add. When a fair attempt has failed, it may be necessary to have recourse to internal or combined version. In order to carry this out, anaesthesia is given, and a last attempt to turn externally should first be made with the patient asleep, the hand being protected with a sterile towel or glove. In all, from April, 1901, to October, 1908, 225 transverse presentations were dealt with. Of these a few were cases of placenta praevia, while some others came into the world by spontaneous evolution. The remaining 185 were left for external version, and in 35 per cent. of these the desired result was attained. The version was performed at all stages of the birth, from the time when the os was still closed until it was widely dilated. In the majority of the cases the membranes were punctured immediately after the version; in a few they were punctured before. In 7 cases the membranes ruptured spontaneously before the version, and in the same number they ruptured spontaneously after. In 3 cases it was necessary to rupture the membranes later. Forty-seven children were born as vertex presentations. Thirty-four of these were postero-anterior cases and 2 were stillborn, while 1 child born spontaneously as a face presentation also died. In all, 4 head presentation children died, while 3 out of 9 breech presentation cases were born dead.

GYNAECOLOGY.

189. The Gastric Secretion during Menstruation.

DEALING with the gastric functions during the menstrual period, I. M. Wolpe (*Deut. med. Woch.*, December 17th, 1908) briefly recalls the effects which have been noted on the mental state, the sight, the liver and secretion of bile, the intestine, peritoneum, metabolism generally, as well as on disturbances of a febrile nature, of the heart, etc.; on tuberculosis; and, lastly, on disturbances of the stomach. The author has studied the secretory and motor conditions of the stomach in 12 women in Ewald's clinic. The observations were made in the premenstrual period, during the menstruation, and also in the interval between two periods. He found that the difference exhibited during two periods in the same subject were so small that they need not be taken into account. Certain differences were noted between the conditions during the premenstrual and the menstrual period; but these again were slight, and do not indicate any marked characteristics of the two periods. His 12 patients include 5 who were suffering from nervous dyspepsia, with normal secretion and motility, 2 with anacidity, 2 with gastric ulcer and pronounced gastrosucorrhoea, 2 with hyperacidity, and 1 with subacid gastritis. These cases he compared with women whose digestive organs were normal. After describing the precautions which he took in order to avoid falling into error, he records his results. With regard to the secretion of gastric juice, he found that in all the conditions named the acidity is distinctly increased during menstruation, both when tested with an empty stomach and when tested after the trial breakfast. This menstrual hyperacidity consists of an increase in the secretion of hydrochloric acid, and also an increase in the total acidity. The acidity of the gastric secretion has apparently no connexion with the acidity during the interval, as was shown in cases of anacidity and hyperacidity; but the author supposes that it is produced by a reflectory action of the irritated genitals on the secretory nerves of the stomach. The amount of secretion during fasting was increased during menstruation, even in a case of gastrosuccorrhoea. This was tested in 11 out of the 12 cases, in all of whom no motor insufficiency was present. With regard to the motor functions of the stomach, he found that the motility was distinctly diminished during menstruation. Normally, one hour after the trial breakfast there are 150 c.cm. of gastric contents. When this quantity is diminished there is evidence of weakness of the stomach muscle. After testing by Mathieu-Remond's method, he concludes that a weakening of the stomach takes place during menstruation. These differences between the gastric functions during the intramenstrual and intermenstrual period cause him to warn physicians not to base a diagnosis of gastric disturbances on tests carried out during menstruation.

THERAPEUTICS.

190. Intraspinal Injections of Magnesium Sulphate in Chorea.

MARINESCO (*Sem. Méd.*, November 18th, 1908) has treated four cases of Sydenham's chorea by the above method, and describes the results obtained in these cases. The solution he employed for the injections was a 25 per cent. strength of crystallized sulphate of magnesia, which was prepared a short time before being used, and generally speaking he withdrew first a quantity of cerebro-spinal fluid equal to the quantity of sulphate of magnesia solution which he injected. The first case was a girl of 14, who had suffered from chronic symptoms for a short time only before admission to hospital on June 2nd, 1908. At first limited to the left side, the movements soon spread and became generalized. On July 5th 3½ c.cm. of the magnesium sulphate solution were injected into the spinal canal, and three-quarters of an hour later the intensity of the choreiform movements had greatly diminished. The following day the movements returned in the legs, and as they did not diminish another intraspinal injection (3 c.cm.) was given on July 30th. A half-hour later the patient complained of headache and formication in the limbs and back. The choreic movements had, however, diminished, although movements in the arms persisted. The next day the movements were reduced to a minimum, and by August 2nd they had completely disappeared. The second patient was a girl of 22, who had already suffered twice previously from chorea. Her present attack began July 11th, 1908, and on admission to hospital on July 18th she had all the signs of a generalized chorea. On July 18th 5 c.cm. of the magnesium sulphate solution were injected into the spinal canal. Following the injection her pulse-rate, which previously had been 104 per minute, fell to 68, and one and a half hours later she became numb in the lower extremities, and could not move these, and these no longer showed choreic movements. A few hours later the patient slept, and it was then seen that her respiration-rate was 34 and her pulse-rate 106 to the minute, and her temperature was slightly raised. Three days later the numbness had disappeared, as had also the choreic movements. The third case was a girl of 15, who for about two months had had choreiform movements, and on admission to hospital on August 13th, 1908, these were seen to be very severe and generalized. The next day 3 c.cm. of magnesium sulphate solution were injected into the spinal canal, following on which there was a slight increase in pulse-rate and increased agitation of the patient; the legs appeared numb, and she could not move them; the choreic movements had diminished. Four days later the patient became somnolent, and the choreic movements were still less, but she complained of headache and nausea, which continued until August 20th. At this date the choreic movements were considerably less, and the patient could use her hands to feed herself, and could walk and write. On August 26th choreic movements were noticed in the arms and face, and on this day a fresh injection was given, preceded by a subcutaneous injection of morphine. The following day all choreic movements had disappeared and did not return. The last case was a girl of 11, who had suffered from chorea for a few weeks before admission to hospital on September 9th, 1908. She was then found to exhibit choreic movements of moderate intensity, and limited to the right side; there were also movements of the face, eyelids, and tongue. On September 11th 4 c.cm. of cerebro-spinal fluid was withdrawn, and 2½ c.cm. of magnesium sulphate solution injected, this being preceded by a subcutaneous injection of morphine. One hour later the choreic movements had become less marked, but the patient complained of headache and of a numbness in the limbs. The following day the choreic movements were still less manifest, but as movements of the right arm and face did not cease, another injection was given on September 13th. Fifteen minutes later the pulse quickened, the patient felt nauseated, complained of headache and of vertigo, and the temperature rose slightly. The following day the choreic movements were much less marked and became less and less, and by September 18th had altogether ceased. The author points out that these cases

show that intraspinal injections of sulphate of magnesia exercise a remarkable sedative effect on choreic movements, and that by this treatment the disease completely disappears after a few days, and that these results are superior to those obtained by any other method of treatment. This method of treatment is, however, not without drawbacks; thus, Meltzer and Auer have found respiratory troubles occur, and others have noted motor and sensory disturbances, and sometimes urinary troubles. Some of the ill effects following the injections appear to be due to the toxicity of salts of magnesia, but it is also possible that they be due to impurities in the salt employed. The author has found that subcutaneous morphine injection has diminished the headache and pains following intraspinal injections, and he has never seen urinary troubles follow in young subjects. He is convinced that this method of treatment constitutes an excellent therapeutic measure in Sydenham's chorea, and may be employed in both mild and severe cases.

191. Intestinal Massage in Heart Disease.

MAX HERZ (*Monats. für die phys.-diät. Heilmethoden in der ärztlichen Praxis*, I Jahrgang, 1 Heft) recommends a system of intestinal massage for the treatment of chronic constipation in cases of heart disease. Even though the explanation of the intimate connexion between affections of the gastro-intestinal tract and the symptoms of heart disease may vary from time to time, the fact of the connexion is undoubted. Thus in cases of heart disease the severity of the subjective symptoms is seen to vary with the changes in the course of a chronic constipation. The combination of chronic constipation with the symptoms caused by arterio-sclerosis, and especially by arterio-sclerosis of the coronary vessels, is so frequent that it is claimed that constipation is a cause of the arterio-sclerosis, and it is probably not accidental that anatomical diseases of the circulatory system are usually found with atonic constipation, but the so-called heart and vessel neuroses with spastic constipation. Experience also teaches that treatment of disease of the circulatory system is most effective when normal intestinal action can be restored. Intestinal massage for conditions of intestinal atony is in general use, but it has been objected to for cases of heart disease on the theoretical ground that the emptying of the abdominal veins as a result of massage may momentarily increase the work of the heart, and at the same time lead to an increase in the amount of the circulating blood. On this theory abdominal massage would be obviously contraindicated in cases of abnormally high blood pressure. Herz testifies that these fears are altogether without foundation, at any rate for the simple form of intestinal massage which he advocates. Most systems of abdominal massage are complicated, and include manipulations intended to strengthen the abdominal muscles, others to help to push on the contents of the intestine in the desired direction, and a third group to remove the supposed accumulation of venous blood in the abdominal vessels. Herz, on the other hand, attacks only those parts of the large intestine which are found on palpation and percussion to be pathologically changed, these parts being the caecum, which is often much distended; the ascending colon, which can be felt as a firm cylindrical body: and the sigmoid flexure, parts of which are palpable as hard, sometimes spindle-shaped, sometimes knotty, masses. The affected parts are treated by a very light kneading, while with the finger tips pressure is made on the median side of the abdominal wall to push the palpable masses outwards until they slip of themselves inwards again under the fingers. At the beginning this manipulation is often painful, but the pressure is then reduced, and only increased again as the patient becomes accustomed to the treatment. Herz likes to end up with light vibration, either manual or with the usual apparatus, applied to the same regions. Such treatment carries with it no danger of injury to a weak heart from emptying of the abdominal veins; and since, in an overwhelming majority of the cases, a spontaneous evacuation of the bowel very quickly ensues, Herz maintains that the more complicated and severe methods are superfluous.

192. Meningococcal Serum in Epidemic Meningitis.

LANGE (*Med. Klin.*, February 21st, 1909) has studied the figures of two epidemics of epidemic meningitis, during which 85 cases were admitted into the Augusta Hospital at Cologne. In each case the diagnosis was confirmed by the discovery of Weichselbaum's meningococcus. During the first and the more severe epidemic, between March and September, 1907, 57 cases were admitted. Fourteen of these were not treated with serum at all; of these, 13 died (92.8 per cent.), 4 of which were dying on admission. Thirty-seven were treated with serum, but not systematically; of these, 23 (62.1 per cent.) died, of which 1 was dying on admission, 1 died from septic infection of a puncture wound, and 2 from hydrocephalus; if these 4 are excluded the mortality is reduced to 51.3 per cent. During the second epidemic, between December, 1907, and October, 1908, 28 cases were admitted. Of these, 24 were treated systematically with large doses of serum (adults 30 to 40 c.cm., children 10 to 20 c.cm.), on an average every other day, but, if necessary, more often. The injections were intradural. Of the 24, 9 died (37.5 per cent.). Lange considers the numbers too small to show definitely whether an early resort to serum would give better results than when the serum is given late; but the figures given suggest that this may be so. No harmful effects of the serum injections were observed. The low mortality of the cases in the second epidemic is, at any rate in part, accounted for by the milder nature of the epidemic.

PATHOLOGY.

193. The Serum Diagnosis of Syphilis.

IVY MCKENZIE (*Journ. of Path. and Bact.*, January, 1909) reports on experiments which he has carried out by the complement deviation method first suggested by Wassermann, Neisser, and Bruck. The haemolytic system which he used was one obtained by the treatment of a 5 per cent. suspension of ox red blood corpuscles with haemolytic immune body from the serum of a rabbit treated with ox corpuscles, guinea-pig serum being used as a complement. The corpuscular suspension was treated with five times the minimum haemolytic dose of immune body. As antigen, watery and alcoholic extracts of various organs were employed; in the preparation of the extracts one part of the chopped and pounded organ was put in four parts of normal saline with a ½ per cent. carbolic acid, or in 96 per cent. alcohol, well shaken from time to time, and at the end of twenty-four hours filtered for use; 0.1 c.cm. of the solution of extract in 0.6 c.cm. normal saline was employed for each tube in the experiments. The syphilitic and other serums to be tested were inactivated for one hour at 57° C. before use, and 0.05 c.cm. was, as a rule, used for each test tube. Out of one series of 57 cases in which a clinical diagnosis of syphilis had been made, positive reactions were obtained in 50 instances. No opportunity presented itself of examining the blood of the patient before the appearance of secondary symptoms, but the author's observations led him to believe that in the later stages of the disease the reaction is more marked. A very striking amount of complement was absorbed in some long-standing cases of gummata with bone lesions. Twenty-three cases of nervous disease (locomotor ataxy and general paralysis) were examined, and it was found that in 19 instances the blood serum gave a positive result. In 15 of these 23 cases the cerebro-spinal fluid was also examined; it yielded positive results in 9 instances. It was noted that the cerebro-spinal fluid never gave a positive reaction when the blood serum reaction was negative. The whole of the foregoing results were based on observations made with the same sample of extract; in its preparation one part of congenital syphilitic liver with miliary gummata and numerous spirochaetes was added to four parts of 96 per cent. alcohol, and filtered after twenty-four hours. During the six months in which the extract was used it seemed to undergo little or no change as regards its visible effects on the haemolytic system used. The author found that by dialysis the extract of syphilitic liver lost to a considerable extent its original deviating property, and filtration of the dialysed extract through a Berkefeld filter practically removed the deviating power. From a case of congenital syphilis he prepared alcoholic extracts of various organs in the same proportions; the suprarenal, muscle, lung, and kidney extracts exhibited the power of deviating complement in greater or less degree, but in no case was their activity as great as that of the liver extract. Summarizing his results, the author concludes that the complement deviation method, when carried out with due care, may be of great service in the diagnosis of syphilis. Of 80 cases of syphilis examined, 69 gave a positive reaction and 11 a negative reaction; while from a control series of 53 cases only one gave a positive reaction, and the clinical diagnosis in that case must be considered doubtful.

CORRECTION.

In paragraph 171 of the EPITOME of April 3rd, the name printed "Javaillon" should be "Cavaillon."

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

194. Constitutional Eczema of Infants.

REGARDING eczema as a manifestation of some constitutional anomaly, E. Feer (*Muench. med. Woch.*, January 19th, 1909) calls attention to the fact that in its chronic forms this manifestation is most commonly met with during the first year of life. Acute eczemata are frequently true dermatites, and even intertrigo may be regarded as such. The real chronic eczemata are frequently produced as secondary infections in children possessing a particular anomaly of constitution. He prefers to divide the latter into two large classes: the weeping, scab-forming head eczemata and the disseminated dry eczemata. The former usually attack fat or pasty children, or even those who look rosy and robust. The children, however, may lose a considerable amount of flesh during the course of the illness. As a rule, it starts as a marked seborrhoea of the scalp, and a weeping, scabbed, purulent crust of the haired scalp is rapidly formed and spreads on to the cheeks, leaving the nose, mouth, and conjunctivae intact. On the face it may form scabs or remain moist. The hands and forearms may be infected by direct contact. Rarely, the neck, arms, body, and legs may be affected, while more frequently the groins or other joint folds of skin are affected. As a rule there is not a great deal of itching. The children are most frequently overfed, constipated children with good digestions. Even breast-fed infants are not uncommonly attacked. Spontaneous cure may take place at the end of the first year of life, when a mixed solid diet is given. The second form attacks artificially fed infants almost exclusively. There may be overfeeding. The children are usually pale, thin and flabby. Chronic intestinal disturbance is not infrequently present. It manifests itself as discrete, dry, red desquamating infiltrating islands together with small papular pustular patches, and may attack the whole body. There is but little tendency to weeping or to the formation of scabs. This form has been described as gouty, while Marfan ascribes it to an autointoxication from the intestine. The treatment of infantile eczema is difficult, and many practitioners neglect it altogether, and await spontaneous cure. The public at times has a dread of external treatment, on account of occasional unfortunate accidents. Attacks of fever and the occurrence of convulsions are seen even when the treatment is carefully carried out, and death may take place quite suddenly, with all the characteristics of cardiac failure or dyspnoea, fever, and intoxication symptoms. Feer has observed a number of such "eczema deaths," and has found records of about 30 cases. He believes that these cases are for the most part cases of status lymphaticus. His usual treatment of infantile eczema consists of softening the scabs with oil or vaseline, which must be gradually done; weeping surfaces are treated with very dilute solutions of acetate of aluminium, and subsequent application of zinc paste (oxide of zinc, starch, āā 25 grams; yellow vaseline, 50 grams). Mild patches may be powdered with zinc oxide and talc (3 in 7). Scratching must be prevented. When the healing is delayed he adds the following medicaments to the paste: Naphthalan (5 to 10 per cent.), tumenol (1 to 3 per cent.) for itching; lenigallol (1 to 5 per cent.) for obstinate weeping; sulphur or thigenol (2 to 5 per cent.) for seborrhoea; salicylic acid ($\frac{1}{2}$ to 2 per cent.) for infiltrations, etc. When the patches no longer secrete much fluid he finds the following ointments useful: Either a bismuth and zinc ointment or Lassar's ointment, consisting of hydrarg. sulph. rub. 1 gram, sulphur 10 to 20 grams, and yellow vaseline to 100 grams. For obstinate disseminated cases he finds sulphur baths useful at times. Obstinate dry eczema may require some Fowler's solution. The most important part of the treatment, however, is the dietetic. Breast-fed infants should be fed not more than five times daily, and only for a short time. From the third month onward he advises barley water if the reduction of the mother's milk does not cure alone. With artificially-fed babies the quantity of food must be reduced to a minimum. The daily supply of milk should be reduced to $\frac{1}{4}$ to $\frac{1}{3}$ or $\frac{1}{2}$ litre, according to the age of the infant. When necessary, the amount of carbohydrate may be increased to make up for the small quantity of milk. If the eczema does not heal within one or two weeks, he reduces the milk still further. Some loss of weight is not harmful to a fat, overfed baby. After the fourth month of life the treatment becomes easier, as more starchy food can be given. In the second half year he gives finely divided stewed fruit with very little sugar, or possibly sweetened with saccharin, or raw fruit, green vegetables, and potatoes. If this fails to cure, milk may be stopped altogether for two to four weeks during the second half year; or it may be sufficient to use skimmed milk. Eggs should be avoided under all conditions, as should be soups. After the eczema has healed the reduced quantity of milk should be kept up for months or even years. In the disseminated form in thin wasted children underfeeding may not be employed, but carbohydrates should be substituted for milk, and attempts should be made to fatten the children with these means. In conclusion, he discusses his experience with Finkelstein's method of giving whey. He believes that good results are obtainable in this way, but does not see any advantage over the method described above.

195. Heredity in Diabetes Mellitus.

IN a reprint from the *Medical Chronicle*, January, 1909, R. T. Williamson publishes his observations upon the hereditary tendency in diabetes mellitus. In a series of 100 hospital cases recorded by him ten years ago a family history of the disease was obtained in 13, and this present publication is the result of his investigations in 250 cases (157 male, 93 female) occurring in private practice, and in which on careful inquiry a family history of the disease was obtained in 47—that is, 18.8 per cent., while in 100 of these more specially investigated such a history was obtained in 22 cases, and this may be regarded as the minimum percentage. As a control to these statistics a family history of the disease was inquired for in 50 cases seen in consulting practice in which the patient was not suffering from diabetes, and none of these presented any history of the disease. Grouping these cases with regard to age a family history was obtained more frequently in patients under 40 than in those over 40 (30.6 per cent. and 13.7 per cent. respectively). On an examination as to the relatives most frequently affected by the disease, they were in order of frequency—brother, father, mother, sister, and in 5 instances among the 250 cases (2 per cent.) the husband or wife of a diabetic patient also suffered from the disease; but such instances cannot, of course, be included in any tables of heredity. Some striking examples are recorded of this family tendency—for example, in a family consisting of two sons and two daughters, two sons and one daughter became diabetic. Each had lived in different towns, and several years elapsed between the onset of the disease in the three cases.

196. Typhoid Fever and Crises of Subnormal Temperature.

COURTELLEMONT AND HAUTEFEUILLE (*Echo Méd. du Nord*, November 15th, 1908) cite a case of typhoid fever in the course of which several crises of subnormal temperature occurred, without the presence of any serious complication. On the seventeenth day of a comparatively mild case, in which the temperature had for some time remained nearly at 104°, the patient, at midnight, had a sudden and violent rigor, with a general sensation of cold. The face was pale, and the extremities felt cold. The temperature, which had been 103° at 9 p.m., had fallen to just over 97°, and she complained of an indefinable sense of illness, with some tendency to syncope. After a subcutaneous injection of caffeine, the general condition gradually improved, but at 3 a.m. the temperature was only 94°, regaining its former height, of between 103° and 104°, about mid-day. The same defervescence took place on the following night at the same hour, and on four subsequent occasions; each crisis, after the first two, being a little less marked and a little less prolonged, the last two occurring during the day. There was no sign of intestinal haemorrhage or of meteorismus, so that perforation was excluded, and no exciting cause for the phenomenon could be found in connexion with heart, lungs, liver, spleen, or nervous system. Pus appeared in the urine on the day following the second crisis, explaining the occurrence of pain on pressure in the right renal region; but in two days the urine was clear again, and the pain ceased in two days more. The disease ran its course without further complication, convalescence being marked only by a long period of subnormal temperature. In trying to discover the

cause of the defervescence, the authors eliminate renal or hepatic insufficiency, gangrene, profuse diarrhoea, sloughing, and profuse sweating, the symptoms of the renal complication having been too mild to cause so grave a crisis. Pyramidon had been given for the high temperature, and it has been found that such subnormal readings were caused by the use of antipyretics; but in this case its administration had been discontinued before the appearance of the first crisis, and they are inclined to attribute the symptom to the effect of the typhoid toxin on the heat centre in the brain.

SURGERY.

197. Gastric Neuroses from a Surgical Standpoint.

DEAVER (*Amer. Journ. of Med. Sciences*, February, 1909) considers the so-called gastric neuroses from the point of view of the surgeon. There are many conditions directly or indirectly causing what is termed "nervous dyspepsia," the origin of the symptoms being referable to some very definite lesion either within the stomach itself or in one of the various organs concerned in digestion which together form a system correlated in every part. A pure gastric neurosis without any evidence elsewhere of neuroses or neurasthenic conditions is most rare, and the most important feature in the diagnosis is the eliciting of a careful history pointing to the general neurasthenic condition of the patient. Producing symptoms of infinite variations, such a diagnosis is most difficult to make, and the existing textbook descriptions of symptoms of diseases of the abdominal organs are practically useless in helping towards the formation of an early diagnosis. Carcinoma, gastric ulcer, puncture ulceration of the mucosa, etc., frequently give rise in their earliest stages to symptoms of so varying a nature as to lead to a diagnosis of nervous dyspepsia, a correct diagnosis being made only when it is too late. As it is more clearly recognized that all the organs of digestion form a system correlated in every part, it will be more readily seen how lesions of any one portion of the tract may give rise to symptoms apparently referable to the stomach only, as has already been recognized in the case of the gall bladder and appendix, and more frequent diagnoses of gall-bladder dyspepsia, duodenal dyspepsia, and appendical dyspepsia will, by such greater refinement of diagnosis and the advising of prompt surgical interference, be attended with better results in the treatment of such conditions. Many other conditions external to the gastro-intestinal tract may reflexly similarly operate in producing symptoms of nervous dyspepsia—for example, renal, pelvic lesions, etc.—and it becomes increasingly more evident that, as a rule, the origin of such symptoms can be traced to some very definite lesion within or beyond the stomach. With but very few exceptions the surgeon's attitude towards these cases should be one of "hands off," if possible separating them from secondary dyspeptic conditions due to lesions possibly coming within the scope of operative interference, while to operate merely for the mental effect upon the general neurasthenic condition is regarded as illogical.

198. Preoperative Sterilization of Septic Cavities by Hot Air.

QUÉNU (*Bull. et Mém. de la Soc. de Chir. de Paris*, No. 4, 1909) points out the difficulty of adequately sterilizing before operative removal a hollow organ—such, for instance, as the uterus or rectum—which is the seat of ulcerating cancer. He has in such cases tried preliminary injections of antiseptic fluids, curetting, and cauterization by chloride of zinc; but these methods have not proved sufficient, and curetting, from its liability to set up intravascular inoculation, is not free from risk. A recent attempt has been made by the author to solve this problem by injecting hot air. In a case of cancer of the uterus the removal of the diseased organ was preceded by the introduction into its very foul cavity of air heated at first to 300°, and afterwards for three or four minutes to 600°. The patient made a good and speedy recovery, and during the after-treatment did not present any abdominal complication. Culture media to which, after the operation, minute portions of the fluid contents and of the desiccated and scorched inner surface of the removed uterus were added, remained sterile. In dealing with some adverse criticism made by Guinard the author of this communication expressed the opinion that the action of the intensely heated air would not be likely to affect the deep tissues, and also that in a case of uterine cancer it would not extend through the Fallopian tubes and injure the abdominal viscera. In removal of the rectum, however, it would be necessary to take some special step to protect the upper portion of the intestinal canal.

199. Operative Treatment of Ascites due to Hepatic Cirrhosis.

BOGOJAWLENSKY (*Zentralbl. für Chir.*, No. 9, 1909), after an expression of opinion that omentopexy in cases of ascites due to cirrhosis of the liver has not completely fulfilled early expectations, holds that such good results as have resulted from this operation are due mainly to the simple laparotomy and not to the endeavour to establish a collateral circulation by suturing the omentum to the abdominal wall. The good obtained by mere exposure of the abdominal cavity is attributed to an increased capacity of the peritoneum for absorption being set up by the hyperaemia resulting from this operation. The author agrees with Klopstock that in many cases of hepatic cirrhosis the ascites is due rather to an inflammatory condition of the peritoneum than to a mechanical obstruction in the portal circulation. This chronic inflammation, it is suggested, is set up by irritation of the membrane by toxic matter which, in consequence of the impaired function of the liver, is carried by the blood to the whole organism, and particularly to the contents of the abdominal cavity. In 10 cases treated by the author, after the whole of the ascitic fluid had been withdrawn, the parietal peritoneum was moistened by normal solution, and afterwards dried by gauze. This method of treating ascites by laparotomy and artificial irritation of the peritoneum should be regarded, the author points out, as strictly contraindicated in cases in which the renal functions are compromised.

200. Appendicitis in Children.

ALLISON (*Amer. Journ. of Surg.*, No. 2, 1909), in an article on borderline cases in medicine and surgery, points out that in appendicitis in children the diagnosis is rendered difficult by a lack of subjective response and an imperfection of clinical history. These, which are often associated with other difficulties, need deep consideration, for the facts that in young subjects the walls of the appendix offer comparatively less resistance to irritating agents, and that the omentum is immature, indicate a far greater danger of peritoneal sepsis and the necessity for promptness in surgical treatment. There is less vomiting and nausea occurs less frequently in appendicitis than in the gastro-enteric disturbances of childhood. In the "stormy" type of the disease, however, the symptoms are more marked. In such cases the position will often suggest the nature of the attack, the little patient inclining to the right side, with the right lower limb flexed, and the hand acting as a guard over the affected area. Muscular resistance has less weight, clinically, than in adults, but if elicited by gentle manipulation it strongly favours the diagnosis. In the differential diagnosis care should be taken to determine the absence or presence of inflammation in the chest cavity, and also of disease of the hip. Persistent vomiting, abdominal pain, a high temperature and a quick pulse, leucocytosis, muscular resistance during the quiescent periods, the above-mentioned position of the patient in bed, will all, if chest lesions can be excluded, strongly indicate in children an acute attack of appendicitis.

OBSTETRICS.

201. Treatment of Placenta Praevia and Eclampsia.

THE treatment of placenta praevia and eclampsia consists in delivering the patient as rapidly as possible. In the case of the former, the woman runs a risk of death from haemorrhage until the birth is completed, and the child's life is endangered the longer the process of birth lasts. In the case of eclampsia, it has been shown that in from 60 to 80 per cent. of the cases the fits cease after delivery. No difference appears to exist whether the birth is spontaneous or artificial. K. Baisch (*Muench. med. Woch.*, January 19th, 1909) states that it is only logical to deliver the patient immediately after the first eclamptic fit. According to Bumm, the mortality of women delivered immediately after the first fit is 2½ per cent. The difficulty, however, which presents itself is that the os uteri and cervix are closed, and that in the majority of cases these have never been previously dilated, since the patients are usually primiparae. Baisch considers that *accouchement forcé* by means of combined version and extraction, dilatation with

the bag or with Bossi's dilator, is unjustifiable, as the interference may be more dangerous than the eclampsia itself. Mueller's bag is safer than Bossi's instrument, but the two may be combined by applying the bag first with moderate traction, and when the cervical canal is dilated enough Bossi's dilator may open the canal sufficiently to allow of version and extraction, forceps delivery or perforation. Even under the most favourable circumstances, however, these methods scarcely yield better results than an expectant treatment, since valuable time is always lost. He therefore comes to the conclusion that no satisfactory method exists which permits of a safe non-operative delivery of the eclamptic woman. With regard to placenta praevia, combined version by the method of Braxton Hicks has for many years been the standard treatment. The conditions differ from those applying in eclampsia. The greater the danger for the mother, the less may the condition of the fetus be taken into account. In eclampsia the maternal mortality of about 30 per cent. renders it necessary to neglect the child. The infantile mortality in eclampsia is from 20 to 25 per cent. The maternal mortality in placenta praevia is less than 10 per cent. This mortality although high is not so high that the child's life need be neglected. By Braxton Hicks's method, from 5 to 8 per cent. of the mothers die, while from 60 to 80 per cent. of the children also die. This means, therefore, that the child is sacrificed to save at most 5 per cent. of the mothers. By dilators, the maternal mortality has been reduced to 5 per cent. and the infantile mortality to 50 per cent. This is not much better than the result of combined version. Bossi's instrument is still worse, and tamponage does not yield better results. Dührssen has introduced a method by means of which the danger to the mother is kept at a minimum and the rapid delivery of the infant secures a good chance of survival. This is anterior hysterotomy. The dilatation of the cervix and os is dispensed with altogether, and by the help of an exact incision through the cervix, room is made for the passage of the fetal head. Some operators regard the friability of the cervix and its engorgement with blood as an indication for an extraperitoneal operation through the abdominal wall, but Baisch points out that Dührssen's operation is incomparably less dangerous than a laparotomy. In Munich forty vaginal sections have been performed for conditions including placenta praevia and eclampsia. All the mothers have recovered, and of 22 living fetuses 19 have been saved. He regards this method as the ideal one for both the named conditions. A. Fiessler (*Muench. med. Woch.*, January 26th, 1909) pleads for the extraperitoneal abdominal operation for placenta praevia, which Krönig and Sellheim have adopted as the operation of choice for this condition. He attempts on the strength of 9 cases to compare in percentages the value of this method with that of version (83 cases) and vaginal Caesarean section (10). He does not adduce any new facts beyond those depending on the experience of the Tübingën clinic.

202. The Milk in Wet Nurses.

PORCELLI (*Riv. di Clin. Pediatr.*, February, 1909) discusses the quality of the milk in the case of consecutive nursing from the point of view as to its nutritive value. His material is not large, as he has only examined the milk in the case of two healthy nursing mothers, one nursing up to the seventeenth month after the birth of the child (the milk was examined for the last four months), and the other up to the eighteenth month. The milk in each case was examined as to density, amount of water, dry residue, density of dry residue, salts, fat, proteids, and lactose. In one case menstruation reappeared at the sixteenth month. The weight of the child was also taken at regular intervals. His general conclusions are that the nutritional state of the infant is best in the following order: (1) When nursed by its own mother; (2) when nursed by a wet nurse with the first milk; (3) when nursed by a wet nurse with the second milk, provided that this milk is not too old and the milk be given, as in the first case, in the child's own home, or at least the wet nurse lives so near as to be watched daily. Artificial feeding gives the worst result as compared with any of the previous alternatives.

THERAPEUTICS.

203. Inunction Method of Administering Drugs to Children.

RACHFORD (*Amer. Journ. of Med. Sciences*, January, 1909), from previous experience with inunctions of guaiacol in the treatment of tuberculosis in infants and children, points out the value of this method of treatment for all drugs which are capable of being so administered, and which are intended to influence lymphatic or blood diseases, or to act favourably upon the respiratory passages or at the point of excretion. The cutaneous surface in infants being four times greater in proportion to the body weight than in adults the whole blood and lymph circulation is in closer communication with the blood vessels and lymphatics of the skin, and drugs rubbed into the skin make their appearance quickly in the urine, faeces, bronchial mucus, and other secretions. The vasomotor mechanism also being more responsive to reflex stimuli than in adults, and the lymphatic functions being more active, the facilities for absorption by the friction and heat of inunction are greater in infants than in adults. Since in young children nutritional problems in the treatment of diseases are of the greatest importance it is evident that where drugs can be administered other than by the stomach the risk of upsetting digestion and nutrition is avoided. Experimentally it was shown that such drugs as guaiacol, iodine, oil of wintergreen, and salicylic acid were capable of being easily introduced into the circulating media of the body by inunctions through the skin, and that this result was more easily obtained in infants and young children than in adults. For inunctions of iodine a 6 per cent. iodine vasogen was used, while the other drugs were combined with anhydrous lanoline in the proportion of 1 drachm to the ounce. The chest and abdomen having been washed, hot moist towels were applied for a few minutes in order to warm and redden the skin. One drachm of the ointment was then gently rubbed into the chest and upper abdomen, the inunction lasting for from five to ten minutes. The drug generally appears in the urine within two hours, and the younger the child the sooner does this take place. Guaiacol administered by this method was found to be a valuable remedy in lymphatic tuberculosis, tuberculous peritonitis, streptococcic and other localized infections of the lymphatic tissues, pulmonary tuberculosis, and in all diseases where a pulmonary or bronchial antiseptic was indicated. In the treatment of influenza, bronchitis, and other respiratory affections in infants guaiacol inunctions have been advantageously used to the almost entire exclusion of expectorants. Mercury, and colloidal silver in the form of unguentum Credé, are among other drugs which can be administered most efficaciously by inunction.

204. The Treatment of Whooping-cough.

IN a clinical lecture on the treatment of whooping-cough, E. Feer (*Deut. med. Woch.*, October 8th, 1908) shows that in the first year of life this disease is responsible for many more deaths than are measles, diphtheria, and scarlatina, while in the second year of life the mortality of pertussis is nearly equal to that of morbilli, is twice that of scarlatina, and is only second to that of diphtheria. In the third year it is considerably less. The disease is preventable, and as such should be prevented. This is, in the author's opinion, possible by carrying out a strict prophylactic treatment. In the first place, the patient should be isolated. As soon as the diagnosis can be made the patient should be separated from all healthy children until the cough has entirely disappeared. It is a very bad principle to allow children to play in open-air playgrounds with other children during convalescence from pertussis. Those who have been unavoidably exposed to infection should be isolated for from ten to fourteen days, and if then free from cough and catarrh may be allowed to go to school or mix with others. The most infective period is the early stage of the disease, before the cough has become characteristic. The sputum should be collected, if possible, in suitable vessels and disinfected, not so much to destroy the causal microbe of pertussis as to destroy other accompanying microorganisms. Feer does not believe that any good is done by disinfecting the patient's room after the attack is over. A suspected case should be treated just like a certain case until the true nature of the illness can be made out. Since no specific has up to the present been discovered, the treatment has to be conducted on wide lines. It has been noticed that rachitic, nervous, and neuropathic children are more severely attacked than other children. Feer is inclined frequently to ascribe the apparent beneficial effect of a certain form of treatment to the effect on the child's nervous system. It therefore becomes necessary to take the child's nervous disposition into account, and to pay attention to conditions which might influence this. He is a firm believer in the efficacy of careful treatment, even if this cannot be regarded as specific. The hygienic-physical-dietetic treatment forms the most important. Whooping-cough children do best in pure air. Provided

that the weather is suitable, and that no fever is present, it is advisable to keep the patients out of doors. Wet, cold, and windy weather, however, is actually dangerous. Dust must also be avoided. When it is necessary to keep the patient in bed or in the room, it becomes essential to keep the air free from dust, warm and moist, and the patients should be prevented from soiling their hands on the floor. It is a great advantage, when possible, to place two rooms at the disposal of the patient (night and day rooms), so that proper ventilation, airing, and cleaning can be safely carried out. Change of air is only advisable when the conditions at home are bad, and must be strongly condemned when the patients have a good garden and airy, clean house. The only effect of such a change is that the infection may be spread far beyond the original area. Hydrotherapeutic measures are useful in complicated cases, especially for bronchitis and bronchopneumonia. The diet must be carefully attended to and must be suitable to the age of the patient. Physical measures are invaluable and must be carried out with coolness, kindness, and firmness. With regard to drugs, the vaunted specific medicaments may do good, even if they do not cure the disease. Quinine, best given in the form of capsules of the sulphate (as many decigrams in each dose as the child is years old, up to 1.2 grams), or euchinine, or, lastly, when diarrhoea, etc., is present, as quinine tannate, given in chocolate, at times exercises a beneficial effect on the bronchial affection. Feer does not feel justified in recommending tussol, aspirin, or antispasmin. The thyme preparations at times yield good results and at times fail utterly. The most usual preparations are Golaz's dialysate and Taeschner's pertussin. Insufflations of quinine, etc., used to be employed, but, as no good resulted, have been discarded. Bromoform, when carefully given, frequently acts exceedingly well. It may, however, only be given when the parents are intelligent and when it can be kept in well-stoppered bottles. Feer gives it in doses of $a + 2$ to 4 drops, a being taken as the number of years of age. Thus a child of 3 years would be given from 5 to 7 drops. This he gives from three to four times a day. Of the results obtained, he says that even severe cases usually recover in from four to six weeks under bromoform. The pure narcotics may be used, and of these codeine is the most suitable. It may be combined with guaiacol carbonate. In severe cases, when the child becomes drowsy and the cough becomes less, sedatives may not be given, and it then becomes advisable to employ ammonia and senega as expectorants. Caffeine will also be found useful in these cases. As a rule, he starts a case with quinine or bromoform. If the results are not satisfactory, he tries some other drug after two or three weeks, and only in the severe cases with many attacks does he give codeine.

205. Treatment of Asthma and Emphysema.

BOELLKE (*Med. Klin.*, February 21st, 1909) has found pyrenol of great service in the treatment of emphysema and of asthma. It is given in doses of 3 to 4 grams per day. It is a product of Siam benzoic acid and thymol with synthetic benzoic acid and oxybenzoic acid, and is therefore an expectorant, and possesses by reason of the thymol an anaesthetic property. Boellke has observed its action in 39 cases, of which notes are given of 5. The dyspnoea is relieved in three to four days, and expectoration becomes looser generally on the second day. The cough soon loses its hard and paroxysmal character. A number of patients experienced a sense of well-being to which they had long been strangers. The bronchitic sounds disappeared from the chest, in many cases almost entirely. Relapses were observed in one case only. No harmful influence of the drug was observed, even with long-continued use. No lessening of the effect with time or cumulative action was found. Complications on the part of the heart, kidneys, or liver are not contraindications. Those who had formerly been treated with atropine or potassium iodide declared that pyrenol gave the best results.

206. Cerebral Hyperaemia as a Result of the Injection of Beck's Bismuth Paste.

ALAPY (*Pester Mediz. Chirurg. Presse*, January 17th, 1909) injected Beck's bismuth paste into a pleural fistula of seven months' standing in a child of 4 years. The next day the child complained of headache, and vomited several times, and in the evening she was found to be blind. Ophthalmoscopic examination revealed a "choked disc" in each eye. Vision finally became restored, and the fistula healed. A similar case of bismuth poisoning was recently reported in which signs of poisoning occurred six weeks after the injection, and led to death. At the autopsy, besides the usual erosions and ulcers in the gastro-intestinal tract, a marked hyperaemia of the brain was found. In Alapy's case, it was probably hyperaemia of the occipital lobe which led to increased cerebral tension and blindness. Alapy thinks that such undesirable complications may possibly be avoided if the bismuth paste is not overheated, so that the subnitrate be not converted into the nitrite. The possibility of embolus may be avoided by using a paste made with a paraffin whose melting point is about 55°. It should be injected at a temperature of 55° to 60°.

PATHOLOGY.

207. Relation of Tetany to Parathyroid Glands.

MACCALLUM AND VOEGTLIN (*Journ. of Exper. Med.*, January, 1909) have endeavoured to ascertain in cases of tetany produced by parathyroidectomy the effect of the administration of various substances, chiefly mineral salts, which might occur normally or under pathological conditions in the animal body, and have paid particular attention to the soluble calcium salts. They have also investigated the changes in metabolism during tetany, and in the chemical condition of the tissues of animals dying in that condition. Recent researches, they point out, indicate an intimate relation between the various forms of tetany and relative or absolute insufficiency of the parathyroid glands. These glands are independent organs with a definite specific function, and are liable to variations both in number and in distribution. Failure to produce tetany experimentally is probably due to leaving behind some parathyroid tissue after an apparently complete extirpation. When extirpation is complete tetany appears, even in herbivora, but only a very small amount of parathyroid tissue is required to prevent it. The effect of the extirpation of the parathyroid glands may be annulled by the introduction of an extract of these glands even from an animal of widely different character. The active principle is associated with a nucleo-proteid in the extract, and may be separated with this nucleo-proteid from the remaining inert albuminous substances. Its effect in counteracting tetany appears some hours after injection, and lasts several days. The extract does not contain iodine. The authors think that in tetany there is some disturbance of the composition of the circulating fluids, normally prevented by parathyroid secretion, which disarranges the balance of the mineral constituents of the tissues. Possibly this is due to the appearance of an injurious substance of an acid nature, since the tetany may be relieved by extensive bleeding with replacement of the blood by salt solution. The calcium salts have been shown to have an important relation to the excitability of the central nervous system their withdrawal leaves the nerve cells in a state of hyperexcitability, which disappears on supplying a solution of a calcium salt. Tetany may be regarded as an expression of hyperexcitability of the nerve cells from some such cause, since the injection of a solution of a salt of calcium into the circulation of an animal in tetany promptly checks all the symptoms, and restores the animal to an apparently normal condition. Injections of magnesium salts probably have a similar effect, but these effects are masked by the toxic action of the salt. The injection of sodium or potassium salts has no such beneficial effect, but rather tends to intensify the symptoms. This is also true of the alkaline salts of sodium, which the authors specially studied in respect to their basic properties. The investigators consider that the effect of calcium is of value in human therapeutics in combating the symptoms of spontaneous forms of tetany, and in relieving the symptoms in cases of operative tetany, and thus tiding over the period of acute parathyroid insufficiency until remnants of parathyroid tissue can recover their function, or new parathyroid tissue can be transplanted. It is in this way an important and convenient ally of the method of injecting parathyroid extract. Studies of the metabolism in parathyroidectomized animals show: (1) A marked reduction in the calcium content of the tissues, especially of the blood and brain, during tetany; (2) an increased output of calcium in the urine and faeces on the development of tetany; (3) an increased output of nitrogen in the urine; (4) an increased output of ammonia in the urine with an increased ammonia ratio; (5) an increased amount of ammonia in the blood.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

208. Brown-Sequard's Paralysis of Traumatic Origin.

DONATH (*Pester Med. Chir. Presse*, No. 1, 1909) reports the case of a man, aged 34, who in a drunken squabble was stabbed in the back with a clasp-knife; he fell in a heap, but was not unconscious. When admitted to hospital he suffered from haemoptysis. He was an excessive smoker and drinker, and had had gonorrhoea. There was a wound 1.5 cm. long, to the right of the spinous process of the fourth dorsal vertebra. The power of the right leg was much diminished; his walk was highly spastic and paretic, and the foot dragged. The belly reflexes (the epi-, meso-, and hypo-gastric) were absent, as well as the cremasteric on the injured side; they were active on the left side. The patella and tendo Achillis reflexes were exaggerated on both sides, particularly on the right, where also there was foot clonus. Babinski's sign was absent. Disturbances of sensation began in front at the fifth rib, behind at the tenth dorsal vertebra. On the right half of the body there was tactile hypoaesthesia and acute hyperalgesia; on the other side there was analgesia, including hypalgesia and thermanaesthesia for cold as well as heat. The muscular sense in both extremities was good and equal. A marked anaesthetic district was found in front from below the nipple to the inguinal region, extending outwards as far as the nipple line. Behind was a similar area the size of the palm, at the side of the vertebral column from the ninth dorsal to the fourth lumbar. The part of the cord injured was in the fifth and sixth spinal segments, corresponding to the fourth dorsal vertebra. The innervation area of the fifth thoracic segment corresponds to the region of the fifth rib in front, and behind to the eighth vertebra. As to the absent belly reflexes, according to Oppenheim their centre is still lower, eighth to twelfth dorsal. In this patient, on the injured side the hyperalgesia was very marked, while on the opposite side there was little or none; painful cramps occurred in the affected leg and in the right hypochondrium. During the attacks the patient groaned, his face became covered with cold sweats, and there were clonic convulsions (trepidation) in the extremity. Some of these attacks lasted five to ten minutes, and were probably due to some irritation of the pain-conducting fibres. Donath remarks on the surprising improvement which sometimes takes place in these cases, and must be attributed to the incision being clean, early union, vicarious action, regeneration, and functional recovery consequently ensuing. In Brown-Séquard's palsy the loss of sensation is quite intelligible; not so the improvement in function which occurs for pain sensation and motor palsy. Woroschiloff, Raymond, and Gowers have sought explanations; Oppenheim, Münzer, and Wiener assume that every stimulus which enters the cord through the posterior roots splits into two components, one of which goes up by the long, direct, ascending path, fasciculus posteriorus, and enters the subcortical centres—cerebellar, bulbar, pontine. If an interruption in the long, direct, ascending path takes place, the splitting of the upward-going impulses is hindered and the whole turned over into the crossed path which goes to the conscious centres, and this causes increased intensity. On this hypothesis and under such circumstances all qualities of sensation should be increased on one side of the body, but up to the present this has not been observed. The assumption must, therefore, be valid for pain conduction. The fact that as a rule tactile anaesthesia is less marked and clears up more quickly is explained by Mann as due to the fact that stimulations of touch are specially conducted by the fasciculus posteriorus, but that the centripetal path is open to them as long as they are still practicable. Other observers (Langendorf, Münzer, Wiener, Ziehen) and experimenters (Borchert, Borwikow, Rothmann) assume the same paths for all sensations, while Head and Thompson think that the long fibres conducting touch also get to the other side by degrees, conduction for long stretches being double-sided. As to the cramps in Donath's case, he thinks they were different from the spasmodynia cruciata of Oppenheim, in which the tonic cramps were associated with pains in the opposite side. Worth noting also is the contrast between the abdominal and cremaster reflexes, which were absent on the lesion side, and the patellar and Achilles reflexes, which were exaggerated on both sides, particularly the paralysed.

209. A Family of Pleuritics.

LEONARDI (*Gazz. degli Osped.*, February 16th, 1909) reports the facts concerning a family several members of which developed pleurisy with effusion. All the family were marked by considerable pallor of a faint yellowish type, slight oedema of the eyelids, sluggish in movement and in mind, and, as it were, submyxoedematous. In 1901 the eldest son, aged 19, developed a pleural effusion on the left side without fever and without pain, and attributed to cold. This was twice tapped and about 5 litres of serous fluid withdrawn. Cure soon followed and the lad entered the army, and a year later had another attack of left pleural effusion, for which he was tapped. Somewhat later he had a third attack with effusion as before. No sequelae were left, no adhesions, and no tubercle. In 1902 a brother, aged 16, had an attack of right pleurisy with effusion, for which he was tapped twice. This also was unaccompanied by fever or pain and left no sequelae. The boy was hardly cured when a younger sister, aged 14, developed a mild pleurisy with effusion, which was absorbed without any paracentesis. In 1903 the mother, who was a robust woman about 40, developed pleurisy with effusion (tapped twice), which only slowly cleared up. She had some trace of albumen in the urine and presented a pemphigous kind of eruption on the skin which was hard like scleroderma; the pulse was frequent and of high tension. The sister of this patient was said to have suffered for a long time from a similar skin trouble and to have died of dropsy. In 1904 the child of the eldest son in its turn developed an empyema. The author thinks there is something more than mere coincidence in his group of cases, and suggests that the root cause predisposing was a kind of submyxoedema, due in its turn to want of proper action of the thyroid. The only member of the family who did not develop pleurisy (the eldest daughter) was very anaemic and suffered from oedema of the lower limbs.

210. Tobacco Poisoning in an Infant.

JULES LEMAIRE (*Ann. de Méd. et de Chir.*, March, 1909) relates a case of acute tobacco poisoning. The accident occurred to an infant of 1 year of age. He prefaces the story by referring to the fact that classical authors describe two forms of acute tobacco poisoning: (1) The acute, evanescent form with malaise, nausea, vomiting, headache, vertigo, and cold sweats; (2) the grave form, with excitement, headache, vertigo, affections of the sight and hearing, slowness of pulse, dyspnoea, vomiting and diarrhoea, extreme weakness with coldness and stupor, ending in collapse with intense dyspnoea, failure of the pulse, and death by asphyxia. The case in point occurred on December 12th, 1908. The infant, 1 year and a few days old, swallowed a cigarette made by W. D. and H. O. Wills, known as Three Castles brand. This occurred at 6 o'clock at night, after which the infant had its usual meal and went to sleep. After a quiet sleep of about an hour the infant woke and began to cry and vomit; he turned pale, the face was covered with a cold sweat, and diarrhoea followed. Dr. Lemaire saw the patient at 9 p.m.; he was collapsed and sleepy, pale, with cold extremities, but the pulse and respiration were not interfered with; there was much yawning, and the vomited matter contained much mucus and pieces of the cigarette. Pieces of the tobacco were also found in the stools, and were more numerous there than in the vomited matter. The infant was given two cups of warm tea with one teaspoonful of cognac, and kept warm with hot water and cotton-wool. Towards midnight the child went to sleep and next morning was quite well. The clinical picture presents a case of acute tobacco poisoning in a mild form, but the diarrhoea and collapse would lead one to classify the case as one intermediate between the grave and mild forms of poisoning. Inquiry led to the fact that the kind of tobacco the cigarette contained was pure Virginia and weighed slightly over 1 gram. The case was of special interest on account of the age of the patient—namely, 1 year and a few days.

SURGERY.

211. Slipping of Interarticular Cartilage of Temporo-maxillary Joint.

UNDER the heading of Discitis mandibularis, Lanz of Amsterdam (*Zentralbl. f. Chir.*, No. 9, 1909) describes a morbid condition of the temporo-maxillary articulation, marked by pain, a feeling of abnormal laxity in this region, and, occasionally, a distinct cracking sound during free movements of the lower jaw. Reference is made to two cases, the affection in each being unilateral and on the left side, in which the above troubles ceased after removal of the interarticular disc through a horizontal incision made over the lower margin of the zygoma. In each instance, on opening the joint, the cartilage was, it is stated, found to be abnormally loose. Although in neither of these cases was there any history of previous injury or of an inflammatory attack, the author insists on a close analogy between this affection of the temporo-maxillary joint and the so-called "internal derangement" of the knee-joint, now regarded as being almost always due to a slipped semilunar cartilage. The mandibular condition described by the author of this paper seems to be identical with that known in this country as subluxation of the temporo-maxillary joint, which Annandale has successfully treated by fixing the retained disc by suture.

212. Gangrenous Lymphangitis of Scrotum in the Newborn.

ANDREI (*Riv. di Clin. Pediatr.*, February, 1909) reports 3 cases of this condition, aged 20 days and 2 months respectively: 2 of these recovered and 1 died; he also refers to 7 other cases reported by various authors. As far as the details were given in the various cases the diseased process began in the thigh in 2 cases, over the crural arch in 1, in the umbilical region in 3 cases, the place of origin was not mentioned in the other cases. The processes associated with the separation of the cord are a common starting point for the septic infection which sets up the lymphangitis; in one of the author's cases (the fatal one) this was undoubtedly the case. In two of his cases the streptococcus was found, both locally in the pus of the metastatic abscesses; in the third case *Staphylococcus pyogenes albus* was found in the pus of the secondary abscesses. The disease begins in some slight lesion which usually escapes notice, then the red striae of a lymphangitis and slight red oedema appears. This stage lasts from three to five days. After this the pubic region becomes suddenly red, the scrotum is enormously enlarged, the penis is also affected in a similar way. The scrotum is hard, tender, and dark-red in colour, with purplish patches on its anterior surface, and sometimes bullae; necrosis quickly sets in, and the whole of the testes may become exposed. Symptoms of general infection usually accompany this stage of the disease. If the child survives, the breach in the tissues is rapidly made good; it is possible the testes may subsequently atrophy from inclusion in the scar tissue. The chief condition simulating this gangrenous lymphangitis is erysipelas. Treatment, apart from that directed to the general septicaemia, is local and surgical and consists in free incisions into the scrotum either with a knife or, better still, with the thermocautery.

213. Sprengel's Deformity.

A. E. HORWITZ (*Amer. Journ. of Orthop. Surg.*, November, 1908) brings together and investigates all the known facts and theories concerning this interesting malformation. The scapula in its development is a cervical and not a dorsal appendage. It retains that position throughout fetal life. In its development it passes through the different stages of lower forms, and repeats the history of its species. In congenital elevation alterations in shape are found coinciding with conditions normally seen in the scapula of lower animals—namely, increase in width and diminution in length, rounding of the superior median angle and articulations with the vertebral column. If these articulations were of secondary growth due to attrition, they would be bony throughout, whereas the union at either end or both ends is by means of cartilage. They are, according to Minot, due to centres of ossification appearing within the sheet of development of the scapula. The affected scapula, situated from two to four vertebral bodies' distance above its fellow, is rotated upon its sagittal axis. This is due in part to the weight of the arm and in part to retracted muscles. Scoliosis existed in nearly half the cases. The curve must be regarded as of congenital origin, parallel with defective ribs and vertebrae and other evidences of arrested development elsewhere in the body; cleft palate, spina bifida, congenital dislocations, undeveloped limbs, etc., are due to the same mechanical pressure causes. The undeveloped scapula is not to be regarded as a deformity due to these same causes, but as of another type. The scoliosis is neither primary nor secondary to the elevated scapula. Torticollis is seen in 10 per cent., and cranial asymmetry is 11½ per cent. These deformities are not dependent upon each other, nor upon the elevated scapula. Sprengel regarded this deformity as an upward displacement due to pressure exerted *in utero* through lack of amniotic fluid. The author believes that this is a factor which retains the scapula in its original high position. The caudal migration of the scapula depends upon muscular traction. When this is insufficient, as it may be when the intrauterine pressure is excessive, or when abnormal articulations exist, or when the musculature is *per se* defective, Sprengel's deformity is seen. Treatment consists in operation and gymnastics. The results in cases operated on, where an articulation existed, were good. A degree of improvement is offered by stretching and gymnastics.

OBSTETRICS.

214. Pregnancy and the Puerperium in connexion with Cholelithiasis.

SINCE the time of Langenbuch's and Naunyn's monographs the more frequent incidence of gall stones in women than in men has been abundantly recognized, while the interest of gynaecologists in the subject has increased as observations accumulated on the onset of gall-stone colic in connexion with the puerperium or the end of menstruation. J. Hofbauer (*Med. Klin.*, No. 7, 1909) reviews the literature on the causation of gall stones, and finds that the essential factors, apart from bacterial action, are stagnation of bile, precipitation of cholesterin, free protoplasmic substances, or cell desquamation. An examination is next made of the results of *post-mortem* examinations of the livers of women who have died from intercurrent causes either during pregnancy or the early part of the puerperium. It is found that such livers are characterized by: (1) Fatty infiltration in the central parts of the lobules and diminution in the amount of glycogen in the same regions. (2) Stagnation of bile with deposition of layers of pigment in the central parts of the lobules, together with widening of the gall capillaries. (3) Ectasy of the central veins and the capillaries leading to them. There is present also in the tissue of Glisson's capsule an inflammatory condition of the connective tissue layer such as is found in pregnancy in the mucous membrane of the larynx or the bladder, and the lumen of the bile ducts contain mucous and lymphoid cells which have here and there pressed in from without. We thus find a series of conditions present which help towards the formation of gall stones. Thus stagnation of bile is shown to be present; insufficiency of the liver cells has been scientifically demonstrated to tend to the precipitation of cholesterin; and finally in the larger bile ducts we find hypersecretion of mucus and emigration of lymphoid cell elements. But the presence of concretions does not necessarily imply an attack of gall-stone colic; and Kehr, for instance, calculates that the presence of gall stones only gives rise to symptoms in 5 per cent. of the cases in which they exist. The chief complication to determine an attack is infection of the biliary passages, which may take place from the intestine or through the blood, and a second complication is hindering of the flow of bile. These two factors both come into force far more frequently during the puerperium than during pregnancy; resorption of bacteria from the genital tract, followed by their elimination through the bile, and displacement of the intestines due to changed pressure conditions in the abdomen post partum play the greatest part in producing them during the puerperium. In accordance with these observations is the fact that attacks of gall-stone colic occur far more frequently in the first and second weeks of the puerperium than in pregnancy. The influence of menstruation is next considered. A history is often given that an attack of gall stones coincided with the end of a menstrual period. Our knowledge of any change in the liver coincident with menstruation is very scanty. Senator observed four cases of menstrual jaundice which he ascribed to hyperaemia of the liver leading to swelling of the biliary passages; and Metzger speaks of a relative stagnation of bile under the influence of menstruation. These and similar observations can only be received with reserve as showing a causal connexion between an attack of gall stones and menstruation; but they are supported by recent investigations which show that during menstrua-

tion changes take place in different organs, as, for instance, in the mucous membrane of the larynx and nose, which are similar in nature though considerably more mild than those occurring during pregnancy.

GYNAECOLOGY.

215. Pelvic Pain: Bone Tissue in Fallopian Tube.

DEVÈZE (*Ann. de Gyn. et d'Obstét.*, March, 1909) reports a case where a woman aged 44 had been troubled for twenty years with a feeling of weight in the perineum. There was also severe dysmenorrhoea. She had married when 20 years old, and had never borne a child. There was marked retroflexion and retroversion. A hard nodule as big as a walnut, not tender on pressure, could be defined on the posterior wall of the uterus. After six sittings the uterine displacement was cured by Thure-Brandt massage and a pessary. The pains had entirely disappeared, but they returned at the end of a month. Devèze operated and removed a pair of enlarged sclerocystic ovaries, the larger, the right ovary, being as big as a hen's egg. There was a small myoma as large as a chestnut on the posterior wall of the uterus, which organ was removed. The right Fallopian tube was as rigid as a tobacco pipe. At the junction of the inner and middle third was a hard mass of the bulk of a grain of Indian corn. When the tube was laid open the mass was seen to be porous like a fragment of bone, and on microscopic examination was found to consist of true bony tissue. Devèze considered that the presence of the bony mass accounted for the dysmenorrhoea, as the contraction of the Fallopian tube on the resistant body set up violent colicky pains. He was of opinion that the bone was a relic of an old fetal sac which had undergone bony change as a form of degeneration.

216. Ovarian Cysts Developing after Hysterectomy for Fibroid.

BROUN (*Amer. Journ. Obstet.*, February, 1909) has observed this condition twice in his own operative practice. A woman, aged 39 years, came under his care for a large ventral hernia in the line of a former laparotomy scar, and a small cyst could be defined to the left of the cervix. The patient had undergone myomectomy in 1903 and subtotal hysterectomy in 1906. Broun operated in the autumn of 1908; there were abundant dense pelvic adhesions. One ovary had been removed, the other was the seat of a unilocular cyst of the dropsical follicle type. The second patient underwent subtotal hysterectomy for a lobulated bleeding fibroid; as in the first case one ovary was removed. About a year later an ovarian cyst developed, and Broun removed it. He found that the tumour was a cystic dilatation of a Graafian follicle, with no trace of adenocystoma, and he ascribed the cystic degeneration of the ovary in both cases to disturbance in the circulation of the ovary caused by previous removal of the uterus.

THERAPEUTICS.

217. The Treatment of Syphilis with Mercury.

K. ZIELER still regards mercury as the most important remedy in the treatment of syphilis (*Muench. med. Woch.*, November 17th, 1908). The efficacy of mercury, however, is in his opinion dependent on the proper administration of the drug. Dealing first with "grey oil," he says that it has always been described as mercury emulsified in liquid paraffin. The latter is unabsorbable, and for this reason attempts have been made to substitute for it an oil which is capable of being absorbed. Oleum dericini, which is castor oil obtained at a high temperature and therefore sterile, proved to have this property; the author therefore prepares his grey oil in Neisser's clinic as follows: Hydrarg. puriss. bidestill. 40 grams; lanolin. puriss. steril., 15 grams; and ol. dericini steril., 45 grams. The mercury is first carefully rubbed with the lanolin until an equal and fine emulsion is obtained, and then the oil is gradually added. When properly carried out, the preparation yields mercury globules of equal size varying between $\frac{1}{4}$ and $\frac{1}{10}$ of the size of a red blood corpuscle, that is, not exceeding 2 μ in diameter. When the mercury is finely divided, the injections are painless, non-toxic, and readily absorbable. After standing for a long time, some separation of the oil takes place; but, inasmuch as the oil cannot become rancid, simple shaking will again mix the ingredients up and render it safe for use. Since the introduction of this new preparation 694 cases have been treated by its means, and the author shows that the advantages to the patients are considerable. In three-quarters of the cases large doses up to 0.14 gram of mercury were given without producing any severe forms of intoxication. Some patients received ten or even twelve injections of 0.14 gram of mercury in all. Men tolerated the high doses better than women, in whom infiltration, etc., sometimes occurred. He therefore gives women from 0.05 to 0.07 gram as a rule, and never exceeds 0.1 gram. In one case five injections of 0.14 gram beside salicylate of mercury and calomel in a weakly patient led to loss of weight, stomatitis, and severe anaemia; but these effects disappeared under suitable nursing, etc. While he admits that there is no reason to push the dose very high in women, he finds that the doses in which his grey oil can be given guarantee an energetic action of the mercury. It is necessary to employ a first-class oil for the purpose, and also to select the cases with care, if good results are to be expected. With regard to the injection syringe, he states that a great degree of exactness is required in the graduation. Barthélemy has introduced an instrument which admits of the injection of 0.01 gram of mercury in the 40 per cent. oil being accurately given. 1 c.cm. of the oil weighs 1.25 grams, so that each cubic centimetre contains 0.5 gram of mercury. Each graduation on the syringe, therefore, corresponds to $\frac{1}{50}$ of a c.cm. The syringe and the platinum iridium needle must be sterilized before use and the injections must be carried out into the gluteal muscles. Care must also be taken that the point of the needle has not entered a blood vessel before the injection is made. When the first two or three injections are followed by hard infiltrations he does not continue the treatment, as it is evident that the oil has become encapsuled. The injections should never be made in the same place twice in the same course. In robust persons he injects the grey oil every fourth or fifth day, but later he increases the intervals between the injections. Next he turns his attention to calomel injections. Grey oil is the best remedy for patients who do not need a very rapid removal of symptoms. When the latter is required, calomel is the best form of mercury. Ten per cent. suspensions are usually very painful when injected. Lang suggested that calomel could be employed in the same manner as metallic mercury in grey oil, and showed that the injections were less painful. The author uses the following mixture for this purpose: Calomel 4 or 5 grams, lanolin anhydr. camphor. 5 per cent., and ol. dericini camphora. 5 per cent., in proportions of 1 : 3, to make 10 c.cm. This yields a mixture which contains 40 per cent. by weight of calomel. The calomel must be absolutely pure, and is best prepared by the wet method, washed in pure ether or in boiling alcohol. The manipulations should be carried out in the dark to prevent any chemical dissociation. He injects 0.112 to 0.12 gram of calomel *pro dosi*, and repeats the injections every four to six days. A course includes from eight to fourteen injections. Of 32 women submitted to the course, 7 manifested no ill effects. One patient was given three injections, of which two led to softening and abscess. This patient had shown intolerance of other forms of mercury injections. Of the rest, only a few patients complained of pain at the injections and the like slight side-effects; 146 men were also injected with calomel. Although some pain was complained of on a few instances and slight signs of mercurial poisoning were seen occasionally, the doses were readily absorbed in the vast majority. The author recommends this method of applying mercury to the practitioner who has to treat bad cases of syphilis.

218. Tuberculin and Similar Preparations.

MOELLER (*Muench. med. Woch.*, November 10th, 1908) believes that the subcutaneous application of tuberculin cannot exert any deleterious effect on the body, save inasmuch as the temporary disturbance of the general health during the reaction is concerned. The fear of the results of the injections, which he considers to be unjustified, is, nevertheless, widespread, and at times offers an insurmountable obstacle to its application. For such cases Moeller proposes other methods of giving tuberculin. First he deals with inhalations. The chief disadvantage of this method is the impossibility of an exact dosage. The nasal application of tuberculin is better, but does not equal the subcutaneous injection in sharpness of results. Tuberculin can be applied per rectum in the form of suppositories, or as enemata, and can produce reactions in this way. Calmette has found, and Moeller, too, has seen, that tuberculin given by the stomach can exercise its specific action. This has been tested in animal experiment. The author soon learned

that when given by the stomach in man, even when the acid had been partly neutralized, it did not give satisfactory results. Tuberculin given in *gelodurat* capsules, however, is absorbed smoothly, and produces the full effect of the toxin. The capsule is not attacked in the stomach, and only after it has passed into the bowel is the tuberculin set free. The gelodurat capsules are made of the wall of the small intestine. Moeller found that when given in this way tuberculin exercises the same action as when applied subcutaneously. Not only for diagnostic purposes but also for treatment does the physician meet with patients who object to tuberculin, when injected. The objection disappears when he is asked to swallow the drug. The objections to treatment with ordinary tuberculin and with bacillary emulsion are to a certain extent justified on account of the fact that hypersusceptibility at times sets in. This can to a certain extent be diminished or prevented by combining the emulsion of other acid-fast bacilli, which are nearly related to tubercle bacilli (for example, Timothy bacilli, blind-worm bacilli), and the author has shown that the specific process is equally manifested by the "tuberculinoids," that is, the emulsions of the other acid-fast bacilli, as by the true bacilli of Koch. The dose of the allied tuberculins, however, has to be higher than that of the real tuberculin. Next, the author discusses the combination of calcium formate with tuberculin, on lines similar to the combination of the formates with diphtheria antitoxin, which is supposed to be useful. He has experimented in this direction, and has introduced a combination which he calls tuberoid. This is put up in gelodurat capsules, each capsule containing 0.001 mg. of tubercle bacilli in emulsion, 0.0001 c.cm. of emulsion of Thimothein, and 0.01 gram of formate of calcium. At first he gives one capsule every second day, and after two or three weeks he gives one every day. Naturally the variations in dosage must be considered in each case. He found this method of treatment useful in children with tuberculous glands. Febrile patients often lose their fever under the influence of tuberoid. Further, he has found it very useful in the tuberculosis of pregnant women. The effect of the treatment is characterized by the disappearance of night sweats, the diminution of the cough, and the easing of expectoration. Purulent sputum becomes serous, and the appetite improves. He has obtained good results in early stages and in the larvated forms in which the general condition is considerably affected.

219. Physical Treatment of Bronchial Asthma.

ALOIS STRASSER (*Monats. f. d. physikal.-diätetischen Heilmethoden*, January, 1909) has during the last sixteen years made use of hydrotherapeutic measures for cases of asthma; the methods employed have been the customary ones which have for their object lessening of the general reflex irritability by stringing up the nervous system—for example, general douches, local douches applied to the legs, simple and Scottish douches to the epigastrium. Such measures have often given good results even in severe cases where asthma has been complicated by bronchial affections such as chronic swelling and exudative catarrh, the treatment being indeed that employed for bronchial affections apart from asthma. On the other hand, in a number of severe cases these douches, etc., have had no result. V. Strümpell has of late warmly advocated electric incandescent light baths for bronchial asthma; and Strasser, working on v. Strümpell lines, fully confirms his view as to the benefit to be obtained from such baths. Strasser has in some respects varied the manner of the bath as recommended by v. Strümpell. Especially he has modified the after-treatment, and instead of allowing the patient after the bath to remain in a bath of sweat, and be gradually cooled off during two hours in bed, Strasser in mild cases follows up the bath, which is not more than of ten minutes' duration, with a douche or rubbing down, followed by movement of the muscles, while in more severe cases the bath takes a slightly longer time, the hydrotherapeutic measures which follow are milder, and the patient rests in bed after them for from one to two hours. Strasser finds that in asthmatic patients it may be as long as from seven to eight minutes before the bath causes a profuse perspiration, and he regulates the duration of the bath not by the amount of sweating induced but by the subjective condition of the patient; as a rule the initial baths are not longer than from six to eight minutes in duration, and a bath of more than fifteen minutes is scarcely ever given. Daily baths are found to be in some cases exhausting, and they are therefore given either every other day or on two days out of each three; on the intervening days either the treatment is intermitted or general mildly tonic hydrotherapeutic treatment is given. V. Strümpell does not recommend that the baths should be taken at the height of the attack, but Strasser has found them useful under such circumstances in cutting short the attack. As to the method of action of the baths Strasser agrees with v. Strümpell in laying special emphasis on their diaphoretic effect, and in the view that the light may also have a specific action both on the sweat glands and on the glands and epithelium of the bronchial mucous membrane, to aid secretion, and possibly to lead to the excretion of harmful substances. Strasser also, from the result of observations of the effect of heat upon hysterical patients suffering from spasm of the cutaneous vessels and at the same time from bronchial spasm, suggests that the baths may have a direct antispasmodic action simultaneously on the skin and on the internal organs. The author's conclusion is that whatever be the method of action the baths are undoubtedly of great value in cases of bronchial asthma.

PATHOLOGY.

220. Studies in Anaphylaxis.

RICHET (*Ann. de l'Inst. Pasteur*, June, 1908) has extended his studies of anaphylaxis, using for the purpose of his experiments on dogs a toxin which he terms "actino-congestin." This substance, which is similar in its physiological action to the "mytilo-congestin" employed in earlier experiments, is prepared by extraction from the tentacles of *Actinea equina* and *Anemonia cereus*, animals found attached to rocks on the Mediterranean coast. He finds that the organism of the animals inoculated with congestin manufactures a special substance, quite different from antitoxin, which he proposes to call "toxogenin." This substance has not yet been isolated, but it has been found to exhibit certain well-marked physiological characteristics. The toxogenin is innocuous, since dogs brought into a condition of anaphylaxis present every appearance of good health, and their blood, when inoculated into normal dogs, produces no pathogenic effects. This toxogenin has, however, the remarkable property of developing a poison when it reacts with congestin, the result being that when congestin is injected either in a dog in a condition of anaphylaxis or in a dog which has received a dose of serum from a dog in a condition of anaphylaxis, the animal thus treated very rapidly dies. For the reaction which takes place the author suggests the formula—"toxogenin + congestin = apotoxin." The toxogenin, produced by the first injection of congestin, takes some time to develop. Its incubation period has not been precisely determined, but the commencement of its formation has been noted as early as the sixth day; the maximum development appears to be reached by the twenty-fifth day; it then persists without diminution for fifty days; after this it declines, but is still evident as late as the one hundred and thirty-fifth day. Apotoxin appears to be a poison possessing a selective action on the nervous system, since its effects are inhibited by the administration of an anaesthetic. Besredka (*Ann. de l'Inst. Pasteur*, June, 1908) seeks to explain the curious fact that whereas anaphylaxis is produced in the guinea-pig with small doses of horse serum ($\frac{1}{100}$ to $\frac{1}{200}$ c.cm.), large doses (3 to 5 c.cm.) not only produce less effect in the direction of anaphylaxis, but actually protect the sensitized guinea-pig against the effects of anaphylaxis. His theory is that in every normal serum two properties or two substances are present, the one possessing the character of antigen, the other that of antilysin. He calls the former "sensibilisinogen," and the latter "antisensibilisin." The former is thermostable; it has the property of giving rise in the guinea-pig, twelve days after injection, to "sensibilisin" (= Richet's "toxogenin"), that is, the substance which creates the anaphylactic state. The antisensibilisin is thermolabile; it has the property of combining with the sensibilisin wherever it encounters it, whether the latter be free in the blood or fixed in the nervous system. It is the violent encounter of antisensibilisin with sensibilisin in the nervous system which gives rise to the disturbances characteristic of anaphylaxis. The violent conjunction of these two substances may be prevented if we cause the two to come into contact with each other gradually. This is accomplished by using for inoculation a very large dose of serum, owing to the fact that the large amount of antisensibilisin present in the dose of serum picks out the sensibilisin gradually as it is in process of being formed (that is, in the preanaphylactic period). The same result may also be obtained by bringing a very small dose of antisensibilisin into contact with sensibilisin (vaccination by minimal doses of serum in the anaphylactic period).

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

221. Relapsing Tuberculous Polyarthritis.

PONCET has during recent years put forward the view that attacks of arthritis running an acute course may be of tuberculous origin, and are analogous to the arthritis of other infectious diseases, such as syphilis, gonorrhoea, etc. Schäffer (*Zeit. f. Tuberk.*, Bd. 13, Heft v) accepts Poncet's view and reviews the whole question in connexion with the notes of 11 cases which have come under his own observation. Poncet divides the cases into primary and secondary ones according as the joint affections are the first sign of tuberculosis or appear during the course of an already evident tuberculosis. He also divides them into three groups: (1) Cases of arthralgia, (2) of acute and subacute arthritis resembling rheumatic polyarthritis, (3) of chronic arthritis, resembling any of the different forms of chronic joint rheumatism. Cases belonging to the first group may later pass into the second and finally into the third. Poncet finds that the joint affections are in many cases due to the action of tuberculous toxins and in some possibly to that of tubercle bacilli of little virulence. The first of Schäffer's cases is that of a child 13 years of age, who at 5 years of age had suffered from spondylitis lumbae, and who was now being treated for suppurating tuberculous glands. The case belongs to the first group of arthralgias. The child during the course of the illness suffered from pains in different joints accompanied by slight rises of temperature; the pains never lasted for more than a few days at a time, but with remissions and exacerbations continued for almost a month. Later on there was a monarticular relapse without rise of temperature. The joint affections disappeared as the more obvious tuberculous lesions were recovered from and as the general condition improved. The next case was a similar one, but there were no elevations of temperature, and at two different times there were effusions into certain of the affected joints. In three cases the main features resembled those of attacks of acute joint rheumatism; the temperature, however, never rose to the extreme height of rheumatism, the effusions were fairly often indolent in character, movement of the joints was possible to the extent allowed by the effusion, the general condition was less affected than is usual in rheumatism, and in none of the cases was there a history of a previous angina; in one instance there was, in addition to a strong general tuberculin reaction, also a very marked local reaction. The sixth case was marked by frequent effusions into both knee joints, with final complete recovery; this patient passed through an attack of scarlet fever later without having any joint complication. The next three cases illustrate the tendency for the tuberculous joint affections to finally become localized in a single joint, after it has for a longer or shorter time taken the form of polyarticular attacks. One of them was a primary case—that is, joint affections which came and went were for a comparatively long time the only signs of disease, but the patient finally developed a coxitis with abscess formation. In the tenth case also the joint affections were the first sign of disease; here the patient suffered later from tuberculous nephritis. There is a tendency to agree that such tuberculous joint manifestations are toxic in origin, but Schäffer is of opinion that the toxin acts directly on the synovial membrane rather than indirectly through the central nervous system, as has been suggested by some authorities. Where the condition passes into that of a typical chronic tuberculous affection, it may be considered that the previous attacks of local toxaemia have weakened the resistance of the joint to invasion by the tubercle bacilli. The diagnosis has more especially to be made from acute joint rheumatism. Here the family and personal antecedents of the patient must be considered. The clinical picture also differs from that of acute joint rheumatism in several particulars, which, taken together, are of much significance. The general condition is not at all, or is much less, affected in tuberculous than in true rheumatic joint affections. The acute attacks are not accompanied by sweating; primary angina is not observed; in none of the author's cases was endocarditis present, although in rare instances a tuberculous endocarditis has been noted by other observers; relapses continually recurred; and, still more important, salicylates were altogether without effect. The differential diagnosis from joint affections accompanying the exanthemata, the secondary stage of syphilis, and gonorrhoea, is also considered. In the tuberculous joint affections the reaction to tuberculin, if positive, is a help to diagnosis, and especially if there is, as in one of the author's cases, a local joint reaction. The prognosis depends to some extent upon the condition to which the joint affections are secondary; and as a rule, though not invariably, the joint affections tend to disappear as the primary condition improves. The danger lest the acute cases should develop into cases of chronic tuberculous arthritis makes the prognosis less favourable. The local treatment of acute tuberculous arthritis is purely symptomatic, the chief treatment being that of the principal condition—that is, sanatorium treatment of the tuberculosis.

222. Tic-Douloureux.

BETTREMIEUX (*Nord Médical*, November 1st, 1908) reports a case of facial tic seen by him first in 1897, lately seen again, and found to be without recurrence. The patient was an accountant who had previously submitted to resection of the alveolar ridge, which had given him only nine months' relief. Bettremieux, fixing his attention on the usually neglected symptom of lacrymation, found obstruction of the lacrymal duct in both eyes, although the pain affected only the right side of the face. He catheterized both ducts thoroughly, and followed up the procedure by antiseptic injections. Improvement was felt after two or three days and complete relief in a few weeks. Two years afterwards a slight recurrence took place and was relieved by the same means, since which time the patient has been radically cured. As tic-douloureux is said to be incurable Bettremieux has published this case, with the advice that when trigeminal neuralgia is associated with lacrymation, permeability of the lacrymal ducts, and subsequent disinfection, should always be secured.

SURGERY.

223. Vaso-cellular Carcinoma of the Scalp and Skull.

CHARLES M. FOX (*Quarterly Bull. North-Western Univ. Med. School*, September, 1908) reports a case of vaso-cellular carcinoma of the scalp and skull from the clinic of Professor W. E. Schroeder. A piece of the skull, 10.5 by 11.25 cm. in size, was removed by means of chisel and mallet, and the defect was filled in by a dense connective tissue, that held the brain so firmly that the normal convexity was lost and the exposed area flattened. The motor centres for the leg, arm, and face were all found located anterior to the fissure of Rolando. This was also found to be the case in five subsequent cases in which the brain was exposed. A discussion on the various methods of opening the skull follows, and attention is called to the use of the chisel and mallet, particularly on the ground of availability and simplicity. The author believes, after some experience with electrical instruments for this purpose, that ultimately they will be ideal, but that at present there are some difficulties to be overcome. In regard to the closure of defects in the skull, it is stated that this should not be done unless for some sound indication, as no case is reported in literature where a fatality resulted from the presence of such a defect, and frequently a dense fibrous tissue fills in the defect. Experimental work done on twelve dogs gave the following conclusions: (1) Connective tissue plays a very important part in the repair of defects of the skull; (2) there may or may not be bony union, but if there is not, the connective tissue union is firm enough for practical purposes; (3) old bone or bone stripped of its periosteum acts merely as a foreign body, and has little to do with closure of the defect; (4) it is important to have the skin wound and bone incision apart from each other on account of the possibility of a skin infection causing a meningitis.

224. Tracheal Scleroma.

MAYER (*Amer. Journ. Med. Sciences*, February, 1909), having noted the remarkable results obtained in cases of external scleroma by the use of *x* rays, gives an additional report upon a case of scleroma of the larynx, previously recorded by him two years ago, in which a recurrence was

beneficially treated by the same method. Ten months after the first report a recurrence of the growth took place, causing rapidly progressing dyspnoea. Increasing tracheal stenosis due to scleroma, with secondary involvement of the intranasal mucous membrane existed, and tracheotomy was performed by an incision 3½ in. long through the cricoid cartilage and tracheal rings, thereby exposing the tumefaction of the posterior and lateral aspects of the trachea. The growth, which extended 1¾ in. below the larynx, was greyish-white in appearance, and resembled mucous polyps, readily breaking down. A large tube was inserted with packing about it to keep the wound open. Two days later this was removed, and under chloroform, while the edges of the wound were held apart by retractors, a five-minute exposure to high-frequency current at a distance of 8 in. was given. Paroxysms of coughing and frequently vomiting followed whenever the patient was in any way disturbed, phenomena which were not present prior to the *x*-ray treatment. After an interval of eight days five to six minute exposures were again commenced, and repeated at intervals of two or three days, during three weeks. The growth was found to be greatly decreased in size and the coughing and vomiting reflexes much diminished after the first four exposures, and within six weeks from the commencement of treatment the tube was removed and the patient was discharged as cured, the voice being normal and there being no dyspnoea and no tumefaction of the larynx. A year later the general condition was good and the respiration normal, the patient expressing herself as quite well, except for occasional nasal obstruction. A small pink mass on the right inferior turbinate bone was present, and on the left side of the septum was a rounded mass about 1 in. in length, which was removed by snare. The larynx and trachea showed perfectly normal conditions, there being no sign of any recurrence. Should a recurrence be present at any future time, good results may be expected to follow external *x*-ray application over the cicatrix, since this would not present the same resistance as normal tissues; but, failing that, it would be easy to reopen the wound and make application locally.

225. Otitis Media and Convergent Squint.

Knapp (*Archives of Ophthalmology*, September, 1908) publishes a case of paralysis of the sixth nerve, which came on during an attack of influenzal otitis media. A child, aged 5, developed earache and headache during convalescence from influenza. This persisted for two weeks, and was associated with unusually severe pain in the right half of the face and the right eye. The gums on the right side were sore. Then the right eye turned in. Complete sixth nerve paralysis was found, no fundus change, drum red and slightly bulging. The pain is better, the ear condition was improving; so paracentesis was not done. The case recovered. The group of symptoms pointed to a lesion of the Gasserian ganglion. The ganglion lies close to the sixth nerve at the apex of the petrous pyramid. It is well known that this region can be involved by an extension of the purulent process from the tympanum along the cancellous bony tissue surrounding the osseous labyrinth. The most recent paper on the subject is by Baldenweck (*Ann. d'Oculistique*, April, 1909). This author, after an exhaustive review of the clinical records and autopsies, regards the anatomical lesion which affects the sixth nerve as an osteitis of the petrous process. The complication occurs in cases where there is insufficient drainage. In the absence of other symptoms of intracranial disease the prognosis is good.

OBSTETRICS.

226. Premature Rupture of Membranes.

H. Peters (*Medizin. Klin.*, February 28th, 1909) has designed a metreurynter which is combined with a tube for filling up the uterus in cases in which the membranes have ruptured prematurely and it is desired to retain the power of performing external version if that operation should be required later in the case. After laying before the Dresden Gynaecological Congress an account of his metreurynter the author found that a somewhat similar instrument had been already constructed by Bauer, of Stettin. Peters's metreurynter differs from Bauer's in that the tube for filling up the uterus is close to the tube for filling the metreurynter instead of very much to one side; the top of the filling-up tube projects above the top of the expanded metreurynter, instead of being level with it, and Peters dispenses with a valve inside the filling-up tube, which is intended to prevent the fluid from flowing back out of the uterus, an object which can be more simply attained by clamping the tube outside the vulva after the process of injecting fluid into the uterus is completed. The metreurynter is for use in cases in which the membranes have ruptured prematurely, the cervix being still present, and sufficiently dilated to admit one, or at most two, fingers, whenever version is either immediately indicated or when it seems likely to be needed later, as in cases complicated by narrowed pelvis or oblique or transverse presentations. The filling of the uterus should also be of advantage in prolapse of the cord or prolapse of an arm. The operation should obviously only be undertaken when there is a possibility of a living child being born, and it is, therefore, contraindicated where the conjugate is under 8 cm. If the cervix is not dilated to admit one finger, dilatation to the required extent is carried out by Hegar's dilators. The metreurynter is introduced after being boiled for ten to twenty minutes; in order to prevent air being carried into the uterus the tube for filling the uterus is connected beforehand with a Potain's pressure flask or a syringe filled with sterilized water or salt solution, and the water flows through the tube as the metreurynter is introduced. The tube is then clamped and the dilatation of the metreurynter with 1 per cent. lysoform solution undertaken. When this is completed the clamp is removed from the first tube and the fluid gradually injected into the uterus. There is a certain danger of separation of the lower edge of the placenta, and as a precautionary measure a few drops of fluid are allowed to return through the tube during the process of filling, and a little time after it is completed in order to ascertain that haemorrhage is not occurring. In the few cases in which the method has been employed it is found that from 400 to 500 grams of fluid can be injected into the cavity of the uterus, and this is enough to restore the power of performing external version. The dilated metreurynter forms an efficient tampon to prevent the escape of the fluid, and the operator can either perform version at once or can postpone any operative measure until dilatation of the cervix has proceeded to the required extent or until the metreurynter is expelled. The metreurynter should not be left in position for longer than twelve hours, and should after this time, if necessary, be replaced; this is, however, only necessary in the rarest cases, for as a rule adequate labour pains set in after from three to four hours, and the desired result quickly follows. Where such a procedure is adopted the fetus is spared the harmful effects of the long-continued pressure of the uterine wall in protracted labour, and it is therefore to be hoped that the prognosis for the child may become decidedly more favourable. The author has only once had occasion to use his instrument in a case of narrowed pelvis, in which it appeared likely that version might be required; delivery, however, followed spontaneously, and the case was therefore inconclusive. Bucura made use of the procedure in three cases, and warmly recommended it—the movability of the fetus within the uterus was found to be markedly increased after filling the uterus. In one case there was a certain amount of separation of the lower edge of the placenta, causing haemorrhage. In this case version was successfully performed, but owing to rigidity of the vagina and extension of the arms above the head delivery was difficult, and the child died as a result of the injuries it received during delivery. The author warmly recommends the procedure in the sort of case indicated in the article.

GYNAECOLOGY.

227. Primary Cancer of Fallopian Tube.

Delaunay (*Paris Chirurgical*, No. 1, 1909) performed ovariotomy in May, 1908, on a woman aged 52, who had not menstruated for four years. The abdomen had been swelling for two years; there had been no discharge of any kind from the vagina. At the operation the left Fallopian tube was found drawn high up on the front surface of the ovarian cyst, strongly adherent to the tumour and as big as a man's thumb. The pedicle was not thick or broad, and was easily secured; the ovarian tumour showed no signs of any glandular or other solid growth, and contained clear deep yellow fluid. The right ovary and tube were normal. The diseased left tube was very thick-walled, and the fimbriae and plicae had undergone marked hypertrophy. Borel examined it at the Institut Pasteur, and reported "incipient cancer of the tube." Delaunay admits that no report of the ovarian cyst was made, but it showed no signs whatever of malignancy. In September Delaunay's patient began to

suffer from symptoms of recurrence, and she died in November, 1908, with secondary growths disseminated over the abdomen, and involving the parietes.

226. Ovary Removed Three Times.

RIES (*Amer. Journ. Obstet.*, April, 1909), with the design of showing the difficulty of extirpating a normal ovary entire, reported how a woman, aged 31, suffered when 24 years of age from pelvic abscess after the induction of abortion. Three years later the appendix was removed and part of the right ovary; a year later both ovaries and tubes were amputated, and Ries obtained possession of them. The right ovary looked as though complete like its fellow. Haemorrhage occurred, and the patient applied to Ries. He found a fibroid of the uterus, of the size of a fist, and removed it. The tumour proved to be an adenomyoma, and on the right of the uterus lay a structure which, on microscopic examination, proved to be a normal corpus luteum. Ries also referred to an older case. A woman underwent removal of both Fallopian tubes for suppuration. After recovery haemorrhages set in, and the uterus, full of myomatous growths, was removed. No ovarian tissue could be detected by the naked eye, but Ries made a number of sections through the posterior wall of the uterus, laying open a cavity smaller than a pea. It proved to be ovarian tissue spread out as a thin layer over the posterior wall of the uterus, and it included a perfect follicle containing a normal ovum.

THERAPEUTICS.

229. Ferratin.

IN 1894 Schmiedeberg prepared a substance from pig's liver by maceration with boiling water and subsequent precipitation with tartaric acid, which he designated ferratin. It contained 6 per cent. of iron in organic combination, unaffected by ammonium sulphide. No compound of a similar nature had ever been prepared from liver before, nor, so far as Schmiedeberg knew, from any other organ of the body. Later on, by heating white of egg with an alkali in the presence of an iron salt he obtained ferri-albuminic acid, which he holds to be identical with the original ferratin. Moreover, he considers from the mode of preparation that ferratin is the form into which iron must be converted before absorption into the system. If his contention were true it would raise ferratin to a position of extreme importance in the treatment of anaemia. Experiments carried out by Salkowski did not indicate that ferratin was in any way superior, but slightly inferior, to paranucleinate of iron, a substance introduced by Salkowski himself (*Zeit. für Physiol. Chemie*, Bd. 84, iv, 1909). Moreover, no subsequent observer had obtained any compound with such a high percentage of iron from the liver. Hammarsten prepared a nucleo-proteid from the pancreas by a method similar to Schmiedeberg's for making ferratin, but substituting hydrochloric for tartaric acid. In 1902 Beccari prepared ferratin by Schmiedeberg's method, and found that it only contained 1.67 per cent. of iron (0.52 per cent. if made from ox liver). Scaffidi also found a nucleo-proteid in the liver of the dog, containing 0.18 to 0.44 per cent. of iron; he also obtained a nucleo-proteid from the liver of the pig, containing 1.93 per cent. of iron, rising to 3.59 per cent. after repeated washing. Salkowski repeated these experiments on the pig's liver, and obtained a nucleo-proteid with a fairly constant percentage of phosphorus in the case of each liver examined, but the amount of iron varied considerably. Without prejudice to the value of ferratin in therapeutics, he agrees with Beccari and Scaffidi that the substance prepared by Schmiedeberg from pig's liver was not a new variety of compound or a ferri-albuminic acid, but a nucleo-proteid with a variable percentage of iron, and that the ferri-albuminic acid prepared from white of egg has no connexion with the iron-containing proteid in the liver substance. Scaffidi's results are published in the same number of the journal.

230. Anaesthesia with Artificially-limited Circulation.

THE dangers of general anaesthesia have led many surgeons to rely chiefly on infiltration, conduction, medullar, and venous anaesthesias, while attempts have been made by others to replace the usual anaesthetics by less toxic drugs. A third means of reducing the danger is to employ narcotics beforehand in order to lessen the quantity of anaesthetic required to induce full surgical anaesthesia. Zur Verth (*Muench. med. Woch.*, November 17th, 1908) reports on the experience which has been made in Bier's clinic with a method introduced by Klapp. This depends on the observation that persons who have lost a great deal of blood only require small quantities of chloroform to put them to sleep. In order to diminish the quantity of blood to be saturated by chloroform, he employed a constricting bandage around the extremities, imprisoning a quantity of blood below the stricture. Corning first suggested a similar idea, and Zeigner performed some experiments on animals which demonstrated that this could be carried out in practice. Two rabbits were exposed to the same quantity of chloroform vapour in air for the same time. If the legs of one were constricted by a bandage, the anaesthesia was complete in half of the time required for the other. The animal so anaesthetized awoke from the anaesthetic sleep much more rapidly than the other. On testing the method on human beings, zur Verth found that strong men could be put to sleep quite readily by the ether drop method and kept asleep by slow continuation of the dropping. The quantity of anaesthetic was thus very considerably diminished when the legs were constricted as compared with the quantity necessary to anaesthetize a man under ordinary conditions. Since no harm has followed the Esmarch's method of rendering a limb bloodless, it was not expected that any harm would accrue by the constricting of a limb without driving the blood out of the limb. In practice no harm has been noticed. In discussing whether only the lower limbs or all four limbs should be constricted, he states that experiments were made on himself, his colleagues, and some patients. The pain at first was tolerable when all four limbs were constricted, but after fifteen minutes became so intense that no one could tolerate it. No changes in the pulse or blood pressure, however, took place. While the scopolamine-ether method of anaesthetizing offers such a material advantage over the ordinary method that a new method is scarcely called for, he found that the diminishing of the quantity of anaesthetic beyond the quantity required after scopolamine would undoubtedly be a considerable gain. By means of the artificial limiting of the circulation, the quantity of ether can be reduced to a very low level, and in this way it becomes unnecessary to employ a second toxic substance like scopolamine at all. The second advantage is the rapidity of awakening after the loosening of the constricting tube. Further, he considers it to be an advantage to have a large quantity of blood containing an excess of carbonic acid imprisoned, in case of accident. If the respiratory centre should become attacked by the chloroform or other anaesthetic, a sort of autotransfusion of carbonic-acid-containing blood can be immediately applied by loosening the constrictions. This must work beneficially when it is recognized that it is not the want of oxygen but the excess of the toxic anaesthetic which causes the respiratory failure. The constriction is carried out without any previous hyperaemia or suspension, and must be so tight as to completely arrest the circulation. Only the legs are constricted.

231. Intravenous Injection of Strophanthus in Heart Affections.

DANIELOPOLU (*Arch. des Mal. du Coeur des Vaisseaux et du Sang*, November, 1908) has treated 23 cases of chronic heart affections by intravenous injections of strophanthus, and embodies the results obtained in a short paper. His 23 cases consisted of 8 mitral cases, some of which were accompanied by myocarditis; 6 cases of chronic myocarditis; 3 cases of aortic lesions, with chronic nephritis; 3 cases of asystole in emphysema, accompanied with advanced chronic nephritis. The dose of strophanthus employed was 1 mg., which was repeated not sooner than twenty-four hours after the first injection. In some cases a single injection has sufficed to relieve asystole, but usually two or more injections have been necessary. In no case in which the doses have been repeated has any symptom of accumulation of the drug in the system shown itself. The strophanthin employed was prepared by Merck and employed in aqueous solution, which was sterilized before being injected. One of the most marked effects of these intravenous injections was the extreme rapidity with which the drug acted. The author found that in cardiac cases with very advanced renal lesions the results obtained by intravenous injections of strophanthin were not so good as in cases where the kidneys were less seriously involved; in fact, where there was intense chronic nephritis, the improvement made was very slight. The author observed also, as did Tust and Hoepffner, that in cases of cardiac lesion and chronic nephritis, although the injection of strophanthin has had no immediate effect, yet it

has prepared the way for the action of theobromine, which, given to the same patients before they had received any strophanthin, caused no diuresis. As a result of his experience with the intravenous injections of strophanthin in cardiac affections, the author concludes that strophanthus should be considered one of the best cardiac tonics, the advantage it possesses over other cardiac tonics being: (1) The rapidity and energy of its action on the heart; (2) its exclusive action on the heart; (3) the possibility of one knowing the exact amount of the drug one employs. He also considers that the intravenous method is the best way to give strophanthin, and that this method does not cause the pain and oedema which follow subcutaneous injections. The dose employed should be 1 mg. of strophanthin, which may be repeated at intervals of twenty-four hours. Strophanthin strengthens the heart beat, slows the pulse, and increases arterial tension; further, it favourably influences the cardiac rhythm. It increases diuresis, causes oedema to subside and passive congestions to disappear. Lastly, its action is very rapid. In none of his cases has the author observed any untoward symptom as a result of this method of treatment.

232. The Treatment of Acute Rheumatism.

A. Plehn (*Deut. med. Woch.*, Nos. 51 and 52, 1908) discusses the treatment of acute rheumatism, and emphasizes the wrong principle, which appears to be gaining ground, to throw overboard the older salicylates, on account of their supposed toxic effects on the kidneys. Luethje was the first to demonstrate the changes in the urine which are present when salicylates are given even in moderate doses. Klemperer considered that it is necessary to use the smallest doses possible, in order not to expose the kidneys to the toxic influence. Hauffe, representing the Schweninger school, which refuses all medicamentary treatment, claims to have obtained excellent results without salicylic acid. However, closer investigation has shown that the renal irritation of salicylic acid is more imagined than real, and that perfectly normal, healthy persons frequently pass minute traces of albumen, and even casts, without taking any of this drug. These forms of albuminuria not infrequently clear up while the patient is taking salicylates. Plehn considers that even if slight irritation of the renal apparatus were produced by this drug, since it acts specifically in rheumatic fever, just as mercury acts in syphilis and quinine in malaria, it would be wise to give it freely. He believes that it is necessary to give it in large quantities in order to obtain the full specific effects. First, however, it must be certain that the rheumatic affection is really acute. He prefers pure salicylic acid to the sodium or other salts. He gives it in doses of 1 gram (that is, about 16 grains) every two hours, or 0.5 gram every hour during the first day, but none during the first night. On the following days he gives 6 grams in ½ or 1 gram doses. This is continued until the temperature has been normal for three days and all pains and complaints of all sorts have disappeared. Then he gives 4 grams a day for a week, and after three further days, during which the patient remains in bed but receives no salicylic acid, he allows him to get up, provided that no further symptoms develop. Men stand the doses better than women, and he finds by experience that the proper dosage of this drug can be calculated at 0.08 gram per kilo body-weight per day (this corresponds to about 7½ grains per stone). When salicylic acid produced disturbance of the stomach or other indications caused him to modify the doses, he preferred to substitute aspirin in doses of ½ gram, given six to eight times a day. With these doses both of the acid and of aspirin the body-weight often increased during the medication, the kidneys were not attacked, and even during a nephritis the condition of the kidneys improved. Next he finds that salicylic acid acts prophylactically as far as the heart is concerned. Complications such as endocarditis and pleurisy occurred less frequently when salicylic acid could be given freely from the first than in those cases in which it was withheld. He brings forward evidence to show that this drug is not a cardiac poison when given as he has described. Next he deals with the actual frequency of heart affections in rheumatic fever, and shows that among 319 cases treated by him by salicylic acid, only 2 left the hospital with chronic heart disease due to the attack of fever for which the patient had been treated. Those cases which are treated outside without sufficient salicylic acid, and which when admitted prove refractory toward the influence of the drug, usually do well when treated by injections of quinine and antipyrin, or by intravenous injections of collargol. Finally he compares his results with those of Hauffe, who deals with his patients by means of so-called physical therapy, and shows conclusively that his results are considerably better.

PATHOLOGY.

233. Pathology of Gastric Digestion.

O. Cohnheim and G. L. Dreyfus (*Muench. med. Woch.*, December 1st, 1908) state that the watching of the digestive process through a high duodenal fistula is the only means of ascertaining all the details of the secretion and motility of gastric digestion. This method was first described by Cohnheim and Tobler. The present paper deals with observations and experiments on dogs, on which the high duodenal fistula was performed, and also dogs in which two fistulae were made in the duodenum, so that the gastric contents and the pancreatic juice could be collected separately. In other dogs a gastric fistula was made, while in another the oesophagus was divided in the neck. The dogs were fed by trial breakfasts and trial meals. In the first place they determined that the trial breakfast called forth the secretion of about 16 grams of saliva. The trial meal, on the other hand, produced only from 6 to 7 grams. The former consisted of 400 grams of water or tea, and 50 grams of bread, well divided. Three minutes after taking food the pancreatic secretion and the flow of bile began; one minute later the stomach began to empty itself of its contents, which at first was almost clear fluid, and after became more and more acid. After from thirty-five to forty minutes the first traces of bread were seen. Taking the average of the experiments, it was found that the trial breakfast produced from 145 to 165 grams of gastric secretion, and more than 250 grams of pancreatic secretion and bile. The quantities did not vary materially. The trial breakfast consisted of from 250 to 350 grams of gruel, a beefsteak weighing from 110 to 150 grams, and from 250 to 300 grams of potato mash; 6 to 7 grams of saliva were secreted in response to it, while the quantity of gastric secretion was from 700 to 800 grams and of pancreatic secretion and bile was over 500 grams. The gastric contents were first thin and watery, and later became more acid and thicker. In injecting varying quantities of the gastric contents into the duodenum they found that proportional amounts of secretion and of albumen digested were to be measured. Quite small amounts were registered when no gastric content was passed on into the duodenum, more was found when small portions were passed, and much more when the full quantity was passed on. This is of importance in estimating the pyloric reflex. In order to compare the gastric digestion in the dog with that in man, they determined the acidity of the contents from time to time in the dog. They found that the total acidity was from 52 to 70 and the free HCl from 20 to 30, so that the values corresponded to those met with in man. This was when the trial breakfast was given. The conditions were more complicated when the meal was given. After discussing certain peculiar differences between the acidity of the material collected from the duodenal fistula from that collected through the gastric fistula, they record that the total acidity during the trial meal in dogs corresponds to that of the reclaimed meal in man. Considerable differences, however, were recorded in the free HCl. This was shown to be due to the larger quantity of pepsin which the canine gastric secretion contains as compared with human secretion. Having determined the physiological conditions, and having satisfied themselves that the values obtained by means of the stomach tube after trial meals are approximately correct, they proceeded to imitate pathological conditions. The ingestion of 5 per cent. ammonia produced a temporary gastric catarrh, but did not alter the digestion, nor the acidity, nor the motility. The injection of 4 per cent. NaCl or $MgSO_4$ solutions downwards into the duodenum produced diarrhoea and general disturbance. By carefully regulating the quantity injected they were able to produce nausea, diarrhoea, and general illness without vomiting, which terminated in recovery. This produced a distinct delay in digestion—a disturbance of motility. The sodium chloride produced hyperacidity and smaller quantities of secretion, while the magnesium sulphate produced the reverse—hyperacidity and increase in the total quantity. They lay great weight on the fact that an artificial disturbance of the duodenum is capable of altering the gastric digestion very considerably. They make the suggestion that in human patients a disturbed gastric digestion may possibly be due to a pathological condition of the bowel and not of the stomach.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

234. Anuria in the Newborn.

BAKKE (*Tidskrift for den Norske Laegeforening*, No. 5, 1909) was called to see a female infant, 3 days old, who had had anuria since birth, and was then suffering from convulsions. The child was well developed and well nourished, and nothing abnormal could be detected on examination, such as swelling or tenderness in the renal or bladder region, or atresia of the urethra. A metal catheter was introduced into the bladder, but no urine came away. Thinking that some serious congenital defect was present, a grave prognosis was given to the parents and permission obtained for an eventual autopsy. To the great astonishment of the writer, he was told some days later that the child was living and quite well. It had become steadily worse until the fourth day, when it suddenly began to urinate and to improve rapidly. The only treatment carried out had been baths and administration of ether. The only suggestion the writer can give is the possibly delayed development of the kidney structure. With reference to this case, Jervell, in No. 6 of the same journal, points out that Casper reported a somewhat similar case in *Verhandl. der deutschen Gesellschaft für Urologie I Kongress in Wien, 2–5 Oct., 1907.* This occurred in a boy, 2 days old, who had not urinated since birth. To be able to pass the catheter into the bladder he had first to split open a phimosis and a very narrow external opening of the urethra. Casper therefore regards his case as a pure reflex anuria, thinking that the reflex action on the kidneys was caused by the deformities present. Adenot, in *Lyon Médicale*, 1905, reports 2 cases of anuria in infants, but the first of these cases appears to be a case of simple retention. The second occurred in a boy 36 hours old. By means of an india-rubber catheter 40 c.cm. of an opaque, thickened urine was withdrawn. On analysis it was found to be strongly acid, and gave on filtration a copious reddish-yellow deposit of acid urate of soda. There was a trace of sugar, but no albumen or biliary pigments. Some mucus undergoing dissolution was also present. The author points out that the presence of a trace of sugar and an excess of acid urate is normal in the urines of the newly-born, but the concentration found in this case was altogether excessive, and can only be explained by an anuria. The sequel in this case was also a simple one; after the first catherization micturition was normally established, and the infant prospered.

235. Pathological Anatomy of Haemolytic Icterus.

VAQUEZ AND AUBERTIN (*Arch. des Mal. du Coeur des Vaisseaux et du Sang*, November, 1908) report the case of a woman of 34, who was admitted to hospital complaining of weakness and loss of strength. She had been jaundiced from the 15th year of age. On admission she was emaciated and markedly icteric. Her urine was scanty and dark-coloured, but did not react to Gmelin or Hay's tests. The stools were not decolorized. The blood serum contained bilirubin, but not bile salts. The spleen was felt four fingerbreadths below the costal border. The liver, heart, and lungs were normal. The blood contained about 2,000,000 red cells, the leucocytes varied between 8,700 and 10,200, the differential count being practically normal. The size of the red cells was below the normal. At the *post-mortem* examination the spleen weighed 850 grams, was rather firm, but not sclerotic. On section it was of a blood-red colour, remarkably homogeneous in appearance, and the Malpighian bodies could not be seen. The liver weighed 1,450 grams, and was normal in appearance; the bile passages were healthy, as were also the digestive tube, pancreas, heart, lungs, kidneys, and suprarenals. Histological examination of the spleen showed enormous congestion of the splenic pulp. The Malpighian bodies were normal in appearance, with the exception that the central arteries showed here and there thickenings of their walls. There was no sclerosis. The engorged splenic pulp was found traversed here and there by large and enormously dilated sinuses filled with blood cells. The essential fact appeared to be that the congestion was more marked in Billroth's cords than in the sinuses themselves. The former were enormously dilated and engorged with red cells and were traversed by fine connective tissue strands. The macrophages did not appear to be very active and contained only a small amount of iron pigment. In the sinuses the macrophages were much more active, the cells being swollen and vesiculated and engorged with iron pigment and, in some places, with nuclear débris. Around these cells were seen masses of cell débris. In the greatly-dilated sinuses were to be seen mononuclear cells filled with pigment and the macrophages here were also filled with pigment. A mesenteric gland which was examined was found to be very congested. The medulla of a rib was in a very active condition, showing large numbers of nucleated cells undergoing karyckinetic changes. In the liver there was found an enormous amount of iron pigment in the hepatic cells. This pigment was in the form of large granules. The cells of the peripheral zone were more affected than the others. The larger number of the hepatic cells were of irregular shape, atrophied, and isolated from one another. Fatty changes were not marked. The kidneys showed iron pigment in some of the cells of the convoluted tubes. In the suprarenal capsules it was noted that the pigment in the reticular portion was not very abundant. As the authors point out, these facts indicate rather a blood disease than a liver affection and the anatomical changes found coincide with the changes found in a case described by Oettinger, Bouvoisin, and Fiessinger. In the case of the authors a portion of the splenic pulp was injected intraperitoneally into guinea-pigs, with a result that an almost immediate red cell destruction and leucocytosis occurred, followed by a relatively slow blood reparation; and on examining the organs of the guinea-pig after death there was found an enormous splenic siderosis, without liver siderosis, together with a hyperplasia of the bone marrow. These facts clearly show, as the authors point out, that the splenic pulp has a haemolytic action, but there is no evidence to show that in these cases the spleen had any special haemolytic action. In conclusion, the authors consider that the sequence of events in their case may be considered as follows: A primary change in the blood, changes in the spleen and liver being secondary, and the change in the bone marrow being of a reactionary nature.

236. Acute Dilatation of the Stomach.

R. C. KEMP of New York, in a reprint from the *American Journal of Surgery*, November-December, 1908, discusses the anatomical and clinical types of acute dilatation of the stomach from the point of view of symptoms, prophylaxis, and treatment. In order to discover the effects of acute dilatation of the stomach upon the heart and respiration, two experiments upon dogs were conducted, artificial dilatation being produced and the respiratory and blood-pressure changes noted. In these physiological experiments, however, the conditions are artificial and altered by the anaesthesia, and they are instructive rather from their negative than from any positive deductions. Four anatomical types exist—namely, acute dilatation of the stomach alone; acute dilatation supervening upon a pre-existing chronic dilatation; acute dilatation of the stomach and duodenum, which is the most fatal form; and a mixed type of acute dilatation of the stomach with the intestines (tympanites). In this latter, frequently met with in the acute infections, a fact that is frequently lost sight of is that the tympanites is due to this mixed condition, and treatment directed to the intestine alone may be without result, whereas the acute distension of typhoid with active haemorrhage, for instance, may be relieved by lavage. Seeing that such tympanites is due to a systemic infection or to dietetic errors, it seems absurd to imagine a selective action for the intestines alone. Prophylactic measures consist in rapidity in operating with a minimum amount of anaesthetic and of manipulation of the viscera, and care in feeding after operation, so that food is not given too frequently or in too large quantities, and, in the acute infectious diseases, typhoid fever and pneumonia, the substitution of broths, strained soups of barley, rice, and gruel, etc., for the usual milk diet. The stomach should be immediately evacuated by lavage, as the pressure from its distension is a source of actual danger. Lavage should be carried out at regular intervals several times during the twenty-four hours, as the stomach tends to redilate in many cases, and no food or drink should be given by the mouth. Rectal feeding must be continued for several days, and

thirst relieved by saline enemata, or even hypodermoclysis. Unless other symptoms contraindicate it, after washing out the stomach with plain water in which 2 oz. of milk of magnesia has been dissolved, 3 to 5 gr. of calomel in ½ oz. of water may be inserted into the stomach before the tube is withdrawn. Of drugs, tincture of belladonna, 5 to 10 drops on the tongue, with strychnine hypodermically every four or six hours, may be given. Only second in importance in treatment is posture, the patient lying in an inclined plane with the head of the bed raised on blocks, and by this method in one case of typhoid the tympanitic area in the thorax became lowered 4 in. In the acute gastro-duodenal type the prone position should be adopted.

SURGERY.

237. The Intra-Abdominal Administration of Oxygen.

BAINBRIDGE (*Ann. of Surg.*, March, 1909) publishes the results he has obtained from experiment on animals, and also from clinical research, in regard to the utility of infusion of oxygen into the abdominal cavity in the following morbid conditions: (*a*) Tuberculous peritonitis with ascites; (*b*) after the removal of any kind of ascitic fluid; (*c*) in the final stage of a severe laparotomy, the object of the infusion in such a case being to control shock, haemorrhage, cyanosis, and vomiting. The author has made certain deductions from his laboratory experiments, some of which, however, he acknowledges are not in accord with those reached by other workers. Oxygen, he believes, is completely absorbed in the abdominal cavity. Its stimulating action on both the heart and the lungs is slight, and it has but little effect upon blood pressure; without being an irritant to the peritoneum or abdominal viscera, it stimulates, it is held, intestinal peristalsis. It has been shown by experiment, also, the author states, that abdominal infusion of the gas tends to bring round an animal quickly from deep anaesthesia. In a review of an extensive clinical trial of intra-abdominal infusion of the gas, the author states that though final deductions concerning the practical value have yet to be made, the experience he has already gained warrants some tentative conclusions. It may, he believes, be safely stated the intra-abdominal administration of the gas has a distinct field of usefulness in lessening shock, haemorrhage, and vomiting; in overcoming negative intra-abdominal pressure after the removal of large tumours, in preventing the formation of adhesions, and also after such have been broken down, of lessening the liability of their return, and in influencing favourably certain types of tuberculous peritonitis. In three cases of septic peritonitis in which the gas was introduced into the peritoneal cavity, promising results were obtained. In his description of the method of administration the author states that he uses the so-called pure gas warmed to a temperature of from 90° F. to 100° F. This is accomplished by passing it through a rubber tube from the tank in which it is compressed into a wash-bottle filled with hot water. From this bottle the partially warmed gas passes through a long exit tube coiled in a basin of hot water. This tube is connected with a piece of glass tubing, to which in turn is attached a piece of sterile rubber tubing, through which the gas is introduced into the abdominal cavity. In closing the wound in the abdominal wall an opening is left either at its upper or at the lower end for the introduction of the tube, which is secured by a purse-string suture in the peritoneum. The amount of oxygen to be administered depends upon the exigencies of the case. In instances of abnormal distension from ascites or tumour the girth of the abdomen should, it is suggested, be measured before the operation, and, after removal of the fluid or the large growth, the cavity should be distended to about the same degree, but not beyond this, by the injection of the gas. When there is no abdominal distension, a crude yet practical test may be found by first determining that the liver is not adherent to the chest wall, and is of approximately normal size, and then administering enough gas to obliterate the hepatic dullness. The author is very guarded in his conclusions on the value of intra-abdominal infusion of gas in clinical work, the most definite report being that in some cases the condition of the patient at the time of operation was so bad, or the shock from the operation was so great, that the result without some such support as oxygen seemed to give would have been questionable.

238. Ischaemic Contracture.

DERNIER (*Rev. d'Orthop.*, March 1st, 1909) discusses those cases of deformity (usually in the forearm) resulting from pressure in the course of treatment of fracture. He first deals with the pathology of the subject and shows that the ischaemia leads to coagulation of the myosin in the muscles, to destruction of a certain number of muscular fibres followed by retraction, added to this there are certain phenomena due to changes in the nerves. To prevent these unhappy accidents great care should be exercised in the treatment so as to be on the look-out for signs of undue pressure. If any such signs appear it is good after the apparatus has been removed to elevate the limb for some time, use massage and quick active and passive movements. Curative treatment may be operative or non-operative, in the slighter cases non-operative treatment (elevation, massage, hot air, etc.) continued for many months may do good, but in bad cases operative treatment is usually necessary. Thiosinamin injections have been tried, but without much success—forcible straightening under anaesthesia seems on the whole to do more harm than good. The two chief operative procedures are tenoplasty and resection of part of the diaphysis, in the one case the tendons are lengthened, in the other the bone shortened. The author's preference is for tenoplasty, but the figures are not conclusive either way (resection gave a good result 9 times out of 11—tenoplasty, 13 out of 15). The time taken over each operation is pretty nearly the same. Resection has been followed by pseudarthrosis. As to the time for operation the author does not advise waiting too long, he operates if some weeks of massage, etc., have given no result. In operating he prefers not to use the Esmarch bandage; the haemorrhage can easily be controlled. Post-operative treatment (massage, passive and active movements, hot baths, electricity) is essential and as soon as the operation wounds are healed all apparatus should be discarded. If there is reason to suppose the nerves are injured or involved in scar tissue, these can be attended to at the operation. The author gives brief details of 97 cases reported from various sources.

239. Aneurysms of the Hepatic Artery.

VILLANDRE (*Arch. Gén. de Chir.*, Nos. 1 and 2, 1909) gives a lengthy review of the pathology and clinical characters of aneurysm of the hepatic artery, and discusses the prognosis of surgical intervention in the treatment of this obscure and grave lesion. Aneurysm of the hepatic artery, the author points out, is a very rare affection, the cause of which is an acute arteritis of infective origin, and a sequel in most instances of pneumonia or enteric fever. It develops in the form of a tumour, the size of which is of less import than its tendency to invade and disintegrate the structures with which it is in contact, particularly the biliary passages. The sac usually ruptures into the excretory ducts, this phase being indicated by the symptoms of pain, frequently repeated haemorrhage into the digestive canal, and jaundice from retention. Rupture of the aneurysm into the peritoneal cavity is also a frequent termination of the affection. If left to take its course, hepatic aneurysm will inevitably cause death by more or less rapidly developed anaemia, and by hepatic insufficiency due to chronic jaundice. In considering the prospects of surgical intervention in cases of this kind the author acknowledges that from a physiological point of view ligature of the hepatic artery would seem to be impossible. Two cases, however, have been recorded—one by Tuffier, the other by Kehr—which, together with a pathological record by Ledieu, show that the hepatic artery may be ligatured or obliterated without causing total hepatic necrosis and consequent death. Such necrosis, it is pointed out, can be prevented only in those cases in which the artery has been gradually obliterated in the course of the development of the aneurysm, and the supply of blood has been maintained by a collateral circulation through the branches of the inferior phrenic and the gastric coronary arteries. In the case treated by Kehr by combined cholecystectomy and ligature of the hepatic artery, the patient made a complete recovery.

OBSTETRICS.

240. Laceration of Cord in Labour.

THREE cases of this condition have recently been reported. Lequeux (*Ann. de Gyn. et d'Obstét.*, March, 1909), at a meeting of the Société d'Obstétrique de Paris, read notes of the labour of a multipara. The ovum was expelled at term intact, and just before its complete extrusion from the genital canal the amnion was ruptured artificially and

the child extracted. It weighed 6¾ lb., and cried directly it was born. The cord was partially lacerated close to its placental attachment, one artery being torn through. The length of the cord is not stated. In this instance there was skilled help at hand, but Lequeux states that had the mother been delivered outside a hospital, and before medical aid could be obtained, the child would probably have died asphyxiated in its membranes or else have bled to death. The medico-legal point of interest was the fact that the cord was torn, the laceration involving a vessel by the natural expulsive forces alone. F. Unterberger (*Zentralbl. f. Gyn.*, No.14, 1909) records two cases under his observation in the Rostock University Lying-in Hospital. The first patient was 27 years old and in her second labour; the previous labour had ended at term spontaneously. On this occasion pains set in at the end of the eighth month, and the fetal head presented in the second position. The pains were very strong, and the head was delivered five hours and forty minutes from the beginning of labour; it was then noticed that the cord was twisted twice round the fetal neck. Almost immediately another strong pain occurred, forcing out the shoulder and the whole body and tearing completely through the cord 8½ in. from the fetal umbilicus. The torn ends were immediately ligatured. The placenta, which showed signs of calcification and held one infarct, followed eight minutes later. There was but little haemorrhage, and the perineum was not lacerated. The child was over 20 in. in length and weighed nearly 8 lb. The cord was 18 in. long, and held much Whartonian jelly. The second case occurred a few months later. The patient was a primipara aged 19, short and thin. Pains set in at the end of the eighth month, and were very strong; ten hours later the membranes ruptured spontaneously; the head presented in the first position. Forty minutes later the head was delivered, the cord was seen to be twisted once, very tightly, round the neck, and an attempt to disengage it failed. During the attempt a strong pain occurred, expelling the shoulders, and the tensely-stretched cord tore through completely within 4 in. of the umbilicus. The process was visible to the eye of the obstetrician, who, as in the first case, secured both ends of the cord at once. But little blood was lost before and after the expulsion of the placenta. The cord was 19½ in. in length, poor in gelatinous tissue, and with much less marked spiral rotation than in a normal cord. The child, a female, was 20¼ in. in length, and weighed 7½ lb.; as in the first case it lived. The tissues of both cords were found to be sound, and the laceration was clearly due to their shortness and the strength of the uterine contractions. These cases prove that spontaneous laceration of a healthy cord may occur during a normal labour.

GYNAECOLOGY.

241. Broad Ligament Varicocele.

CAMUSSET (*Thèse de Lyon*, 1908–9) has collected seven undoubtedly authentic cases of this condition, which should be termed tubo-ovarian varicocele. It was once believed to be more frequent than further research has verified, haemorrhage from ruptured varices being far rarer than bleeding due to tubal gestation. The signs of tubo-ovarian varicocele are never well defined. There may be sharp lancinating pains, or obstinate menorrhagia, or habitual abortion independent of any evidence of syphilis or traumatism. The most positive symptom, the presence of a soft compressible swelling in the region of the appendages, is rarely present or, rather, is easily overlooked, yet Budin laid stress on it. Diagnosis is seldom if ever accurate. The causes of varix are not clear, most likely the anatomical course of the ovarian veins and changes in their walls favour its development. Camusset advocates a conservative operation, direct ligature of the dilated veins in young women, especially nulliparae. Each vein should be carefully tied, and when all are secured the varicose mass may be removed. In old subjects, in multiparae, and in all subjects where the uterus and appendages are also the seat of other diseases, radical operative treatment is indicated. Medication is of no avail.

242. Intestinal Obstruction from Necrosis of Fibroid in Pregnancy.

SPERANSKY-BACHMETEFF (*Zentralbl. f. Gynäk.*, No. 16, 1909) attended a patient who was attacked with very definite symptoms of intestinal obstruction late in her first pregnancy. There was a pedunculated fibroid attached to the left cornu; it was observed to grow steadily during the pregnancy. The obstruction seemed to be situated in the left iliac region close to the growth. At length tympanites developed; enemata proved of no avail, and the patient suffered badly from vomiting. Professor Ott made use of the endoscope, and located the obstruction at the junction of the descending colon with the sigmoid flexure. Pains had set in and labour was induced, but the obstruction was not relieved. Ott operated. The transverse colon was found greatly distended and hyperaemic; on raising it the pedunculated fibroid was exposed. It was intimately adherent to the great omentum, which was detached and carefully resected. Then the fibroid was found to be strongly adherent to the large intestine at the point already defined by Ott. In separating the gut its serous coat was damaged, exposing the muscularis; the raw surface was closed with fine sutures. The pedicle of the fibroid, which was short and thick, was excised at its insertion into the fundus. The vermiform appendix, being inflamed and adherent to surrounding structures, was excised. The patient made a good recovery. The tumour showed hyaline degeneration, and the necrotic process so often described by recent observers. Its surface had become inflamed and adherent to the bowel, on which it dragged more and more as the uterus enlarged, and rose upwards during the progress of gestation.

THERAPEUTICS.

243. Treatment of Stricture of the Urethra.

IN discussing the treatment of severe forms of urethral stricture, J. Cohn agrees with Henry Thompson that dilatation remains the proper procedure (*Berl. klin. Woch.*, January 25th, 1909). Even when several strictures are present in one urethra, dilatation may lead to a clinical cure, and the patient will be able to pass his urine without difficulty, and all inflammatory infiltrations will be removed. From a practical point of view the surgeon has to determine what instrument he should use for the dilatation, how long the instrument should be left *in situ*, and how often it should be passed. He described cases in which ordinary dilatation was not possible, which show how difficult cases may be dealt with. In one case the patient, who had suffered from gonorrhoea for the first time twelve years previously, and for the last time six years previously, noticed that his micturition was becoming difficult for about two years. The stream was small, and considerable pressure had to be employed. On passing a sound a dense stricture was felt some 10 cm. from the orifice. A No. 11 (Continental) bougie passed through. As the patient had a dislike to catheterization, Cohn injected a 15 per cent. solution of thiosinamin in alcohol subcutaneously every two days. A sound was passed every fortnight, but no improvement was seen. He therefore gave up the thiosinamin after twenty-five injections, and proceeded to dilate with soft bougies. No. 22 having been passed, he reverted to metal instruments, until No. 26 passed easily. Urotropin and silver nitrate sufficed to clear up the turbidity of the urine, and the patient was then able to pass his urine in full stream without difficulty. The second patient had had gonorrhoea first ten years before, and for the last time four years previously. When admitted there was retention of urine. A Nélaton No. 20 could not be passed. With some difficulty he passed a silk web catheter, and emptied the bladder. (The sizes given are the Continental numbers—No. 20 is between the English 11 and 12.) Cohn then tried the effect of fibrolysin injections but without appreciable effect. After a time he succeeded in passing a No. 15 bougie, and by gradual dilatation he was able to pass a No. 24, both in soft bougie and as a metal sound. Several authors have reported favourably on the injections of thiosinamin and fibrolysin, but he has never seen any good follow the injections. The next case was one of a stricture of the pars cavernosa. Bougie No. 12 could not be passed, while No. 10 passed readily. He then dilated up to No. 18, but after this not only could he not get a larger instrument to pass, but he found that even No. 14 would not go through the stricture. Ten grams of a 1 in 1,000 adrenalin solution were therefore injected into the urethra and allowed to act for some minutes. On trying again he had no difficulty in passing No. 19. The patient was dilated up to No. 26 (that is, English 15), and discharged with a normal urine stream. The fourth case was more complicated. The patient complained of difficulty in passing urine. On pressing heavily, a few drops of turbid urine were passed. A bladder sound passed smoothly as far as the bulbus, but could not be induced to pass beyond. Even a filiform catheter would not pass. Some lukewarm oil was injected and a filiform bougie was then passed. Two days later the same process was repeated, but larger instruments could not be passed. As the patient was able to pass urine better he did not

present himself for two months. After the lapse of this time he came to hospital with complete retention. Not even a filiform bougie could be passed. Ten grams of a 1 in 5,000 solution of adrenalin solution was injected into the urethra, and a filiform bougie was then passed. This bougie had a screw thread at its end to which a catheter could be attached. The bougie was left *in situ* for twenty-four hours, during which time urine passed at the side of the instrument. Metal sounds were then screwed to the bougie, commencing with No. 14 (that is, somewhat larger than No. 7 English), and pushed into the bladder. After No. 18 (that is, No. 10 English) had been passed, both sound and filiform bougie were withdrawn and a silk web catheter was passed. This was left in the urethra for twenty-four hours, during which time the bladder was washed out with silver nitrate solution and boric acid solution. On removing the catheter a larger instrument was passed, until No. 23 was passed readily. The patient could pass urine without difficulty when he left the hospital. In a fifth case, he passed five filiform bougies as far as the stricture, and then tried to get one of them through the stricture. At length one could be directed through into the bladder, and the after-treatment was similar to the fourth case. After discussing several points in connexion with these cases, he turns his attention to cases in which no instrument can be passed at all. Under these conditions, external urethrotomy should be performed. When a stricture cannot be gradually dilated, or when for private reasons of the patient this course is refused, internal urethrotomy must be applied. He prefers Le Fort's method.

244. Injections of Extract of Tuberculous Glands in Tuberculosis.

LIVIERATO (*Rif. Med.*, March 15th, 1909) has carried out a series of experiments on guinea-pigs with a view to determine what influence injections of extract of tuberculous glands has on the evolution of experimental tuberculosis in animals of the same class. In Group A he inoculated the animal with tuberculosis, and then treated with tuberculous gland extract; in Group B he began by treating with gland extract, and some days later inoculated with tubercle; Group C were used as control animals. The animals in Group C all died within a month of infection, Group A within two and a half months, and Group B within three months. The animals of Groups A and B presented few tuberculous lesions (in some cases no naked-eye lesion), especially when compared with Group C, which died showing typical tuberculous lesions. The animals were inoculated by a single injection of 1 c.cm. of the emulsion in 10 c.cm. of a sterile physiological solution of a young (20 to 22 days) culture of living and virulent bacilli on potatoes. Control experiments with extract of normal lymphatic glands gave no protection against tubercle. The author does not feel warranted in drawing any definite clinical application from his experiments on animals at present, but proposes to continue his researches in his direction. The experiments do, however, suggest that scrofulosis—that is, an attenuated tuberculous gland infection—may, in a certain sense, act as a protective vaccine against the development of tuberculosis.

245. Lumbar Anaesthesia.

W. TOMASCHEWSKI (*Deut. med. Woch.*, December 19th, 1908) records the results which he has obtained with lumbar anaesthesia in the Military Medical Academy of St. Petersburg. In all, 104 patients were subjected to the procedure, of whom 87 were males and 17 females; 120 operations were performed on these persons under its means. During the period of from October, 1905, to December, 1907, 60 per cent. of all operations on the lower half of the body were conducted in this way. Lumbar anaesthesia was not applied in cases of definite spinal cord disease, when marked nervousness or hysteria was present, in operations for which no plan could be made beforehand and which were expected to last a long time, to entail great difficulty and possibly create an unfavourable impression on the mind of the patient if awake, for operations which necessitated much raising of the pelvis and for operations deep down in the peritoneum. The ages of the patients varied between 14 and 63 years. In 6 cases—that is, 5 per cent.—no anaesthesia was induced, in 6 further cases the anaesthesia was incomplete. No unpleasant or threatening symptoms were met with. In one case, in a small patient in whom 0.1 gram of tropacocaine was injected, the anaesthesia reached up to the line of the nipples. Two hours after the operation the patient complained of feeling of oppression, and there was pallor and cyanosis of the face and lips. This passed off after twelve minutes. The dose was obviously too high. In another case, a large quantity of cerebro-spinal fluid was accidentally allowed to drain away, and a severe headache lasting three days followed. Headache of short duration and some retching was seen in a few cases. The average duration of the anaesthesia was seventy-one minutes, while the average duration of the operation was forty-four minutes. In 15 per cent. of the patients, affections of the vascular system or lungs were present, but in no case were these affections rendered worse in any way. He used tropacocaine exclusively, and injected from 0.05 to 0.09 gram into the lumbar canal at first by means of Bier's syringe and later by means of a syringe designed by himself. The drug was dissolved in the cerebro-spinal fluid. Scrupulous asepsis is required not only with regard to the skin, instruments, etc., but also with regard to the tropacocaine itself. In 40 per cent. of his patients no changes were found in the urine, while in 60 per cent. traces of albumen, detectable by means of Spiegler's reagent, were met with. The albuminuria cleared off in from one to three days. Severe nephritic changes are, according to the author, extremely rare. In this respect, tropacocaine applied by lumbar injection is preferable to chloroform inhalation. He regards tropacocaine as the safest and best lumbar anaesthetic.

PATHOLOGY.

246. The Serum Diagnosis of Syphilis.

HIDEYO NOGUCHI (*Journ. of Exper. Med.*, March, 1909) has devised a simplified method for the serum diagnosis of syphilis. It is based upon the same principle as Wassermann's, and utilizes the Bordet-Gengou phenomenon of complement fixation to determine the presence of the syphilis antibody in a given specimen of blood serum or cerebro-spinal fluid; but it differs from the Wassermann method in using an antihuman haemolytic system instead of an antisheep haemolytic system. The following reagents are required for making a test by the author's method. (1) *Antihuman haemolytic amboceptor*, prepared in rabbits by injecting them five or six times into the peritoneal cavity with increasing doses (up to 20 c.cm.) of washed human blood corpuscles, allowing five days' interval between each injection. The serum is collected from the immunized animal eight or nine days after the last injection. (2) *Complement.*—Fresh guinea-pig serum. (3) *Antigen.*—Alcoholic extract of organs or crude preparations of lecithin. (4) *Suspension of human blood corpuscles*, prepared by mixing one drop of the blood of a normal person with 4 c.cm. of physiological salt solution. (5) *The serum to be tested.* About 10 drops of blood from a patient are collected in a small test tube, and the clear serum obtained is employed for the test. The author has found that further modifications may be introduced into this method for the purpose of simplifying its use in the clinical laboratory. These modifications consist essentially in drying the reagents on paper and standardizing them. The antihuman haemolytic amboceptor, the guinea-pig complement, and the antigen, when dried and standardized on filter papers, can be kept indefinitely at room temperature in a dry place. In employing the filter paper slips, they are dropped by means of forceps into the test tubes already containing the human-blood suspension and patient's serum. It is necessary to shake the tubes a few times at intervals in order to ensure proper solution of the reagents. The incubation may be carried out perfectly well in the vest pocket if a thermostat is not at hand. Noguchi has examined 465 samples of serum by his new method, and has at the same time examined 115 of these by the original method of Wassermann. This comparison gave the following results: Of 7 cases of primary syphilis the Wassermann test was positive in 5, the new test in all. Of 27 cases of manifest secondary syphilis the Wassermann test was positive in 23, the new one in all 27. Of 12 cases of latent secondary syphilis the Wassermann test was positive in 6, the new one in 9. In 18 cases of manifest tertiary syphilis the two methods agreed, and were positive in 17. Of 18 cases of latent tertiary syphilis the Wassermann test was positive in 11, the new one in 14. Out of 11 cases of tabes dorsalis only 3 were positive to the Wassermann test, but all were positive to the new test. Out of 28 cases suspected of syphilis or of syphilitic origin the Wassermann test gave positive results in 16, the new method in 21. The causes of the observed differences, in certain cases, between the results of the two tests were found to be the existence of a large amount of natural amboceptor for sheep's blood corpuscles in those particular specimens of human serum.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

247. The Heart during Early Convalescence from Acute Infectious Disease.

BEVERLEY ROBINSON (*Amer. Journ. Med. Sci.*, December, 1908) points out that in such diseases as enteric, diphtheria, influenza, pneumonia, and scarlet fever, the heart muscle and the nerves governing heart action are usually organically affected if the disease be at all severe or last its usual period. Cloudy change and fatty degeneration, both of heart muscle, and nerve fibre, may be found; numerous lymphoid cells may be present in the interstices of the cardiac muscle fibres; the muscle fibres may be granular or fatty, and striation obscured. The cardiac muscle degeneration may be general or localized. Sometimes at a late period of the disease the heart muscle may be found hyaline or even fibrous. Fatty infiltration of the cardiac nerves and cloudiness of nerve sheath and irregularity of axis cylinders are not uncommon at autopsies. The heart is flaccid, the walls thin; occasionally there may be hypertrophic dilatation. The muscle is easily torn, and of a yellow or reddish-brown colour. Endocarditis and pericarditis are rare. Thrombi may be found, especially in the right heart. In some cases there is dilatation of the cardiac chambers, but no lesion of the cardiac muscle can be found, nor indeed any organic cardiac lesion. The author points out that it is fair to assume that during life, in minor degrees at least, similar pathological conditions exist even after the acute stages of the disease are passed and the patient has entered the period of convalescence. When, therefore, is it safe to allow such a patient to sit up, get up, take exercise, etc.? In typhoid fever the author believes that as a rule it is unwise for the patient even to sit up in bed until a week or ten days have elapsed since the temperature became normal. He should not leave his bed until he has sat up in bed several times at least, and this without the heart's action or the pulse-rate being much increased in rapidity. If sitting up in bed cause rapid action, irregularity, or intermittency of the heart, great caution should be observed, and if, in addition, there is a soft blowing mitral murmur, with perhaps an accented pulmonary second sound, or if the first sound lack tone, the patient is safer on his back than even sitting up in bed. If blood pressure estimations show a more than moderate difference between pressures whilst the patient is lying flat on his back and when he is sitting upright in or out of bed, we should absolutely forbid any physical or mental exertion. If the patient's temperature be subnormal, he should not be allowed out of bed. If the urine, which was previously normal, becomes lessened in quantity and its specific gravity becomes very low, the author objects to his patient getting out of bed. If, instead of increased rapidity of pulse-rate, the pulse becomes markedly slowed, one should be on the look-out for attacks of sudden heart failure. The author points out that, in convalescence from acute disease, such as typhoid, the possibility of fainting attacks or of cardiac dilatation occurring may exist for weeks, months, or years, and such cases must be watched with the greatest care and patience—time, with proper hygienic conditions of pure air, pure food, proper rest, recreation, and many hours of sleep in the twenty-four, will bring the patient out as well as ever. Of drugs, the most suitable are strophanthus, by the mouth or hypodermically, followed immediately by brandy, whisky, or ammonia. Subsequently strychnine, coca, or digitalis may be employed. In the later convalescent period of certain cases of influenza and typhoid fever the author thinks the Nauheim method of treatment is often of great value. In instances of sudden heart failure occurring during the early convalescence of acute infectious disease, suprarenalin or adrenalin by mouth in $\frac{1}{10}$ grain dose, or preferably hypodermically in solution 1 in 1,000, is very useful. The author insists most emphatically on the necessity of securing complete physical and mental rest to these patients, which may need to be continued for many weeks. In scarlet fever the nephritis of the third or fourth week throws a strain on the already weakened heart, and dilatation is occasioned. If during the scarlatinal nephritis marked rheumatic manifestations are added, we should guard against endocarditis or pericarditis by employing the icebag or hot water bag to the precordial region, and give salicin internally. In croupous pneumonia we should guard our patients against blood clotting by administering citric acid or ammonium carbonate. For the poison of influenza the author thinks quinine or compound tincture of cinchona valuable. As the author points out, the prognosis of a given case during the early convalescent period must depend upon the previous health of the patient, and especially upon the previous condition of his heart. If the patient be young, and hitherto well, the prognosis is usually fairly good, even although the infectious disease has been of a severe type. In patients near or past middle life we should be more anxious, especially after pneumonia or influenza, as there may have been pre-existing myocarditis or valvular disease may have been present, together with a myocarditis.

248. Tuberculosis in Children.

FLOYD AND BOWDITCH (*Archives of Pediatrics*, March, 1909) give the results of a systematic examination of 1,000 families in which tuberculosis had shown itself. This investigation was subsequent to the notification of the disease which has been in operation in Boston for four years, and thus incipient cases were discovered. In their experience the death-rate decreased as the age of the children increased. Predisposition was hereditary. Tuberculosis developed when children were living under defective hygiene; measles, whooping-cough, and influenza predisposed; and intimacy of the children with infected persons was a frequent cause of the disease spreading—36 per cent. of the children thus exposed to infection showed definite signs of pulmonary consolidation; 50 per cent. of the infected children had enlarged tonsils, but only 14.5 per cent. had adenoids. Of the 679 children infected, only 11 had glandular tuberculosis, and only 5 had bone infection; these cases, often known as the surgical type of the disease, must be of bovine origin, whereas the cases studied were those of human origin. In all but two cases the disease appeared as the adult type or chronic phthisis, in the two only was it general miliary in character. The first signs of the disease were languor, pallor, loss of strength and appetite; night sweats frequent, rapid loss of weight, cough constant, but haemoptysis uncommon. Slight evening pyrexia was most significant. The disease was frequently associated with asthma. The authors consider that the use of tuberculin subcutaneously is the most accurate diagnostic means we have: it not only reveals the presence of tuberculosis, but also often indicates where the process is located. With the cutaneous reaction there were rarely constitutional symptoms and no dangers; it is generally reliable. The ophthalmic reaction was sometimes useful, but 3 cases of phlyctenular conjunctivitis occurred and so the tuberculin test was generally preferred. In 14 cases the cutaneous reaction was negative and the ophthalmic positive. Of 73 children with no signs 30 gave a positive reaction to tuberculin; in 174 suspected cases, 112 gave positive reaction. The authors found the *x* rays useful and often proved the disease to be more extensive than a physical examination would suggest. The prophylactic means suggested to combat the spread of tuberculosis in children are: Early notification of all births; better inspection and control of milk supply; systematic school inspection; housing reform; segregation of advanced cases; notification of the disease; provision for the care of phthisical children; education of all school children in hygiene.

SURGERY.

249. Surgical Treatment of Cerebellar Tumours in Children.

BERTHAUX AND BURNIER (*Arch. gén. de Chir.*, Nos. 1 and 2, 1909) hold that operative treatment is indicated in cases of tumour of the cerebellum in childhood when symptoms of cerebellar localization presenting the signs of the common syndroma of intracranial tumours have been observed. It is acknowledged that a precise topographical diagnosis is often very difficult in such cases; but this, the authors suggest, is a further indication for exploratory intervention. The rapid evolution of optic atrophy renders it advisable not to persist for long in the medical treatment of a supposed growth in the cerebellum. Posterior craniectomy, unilateral or bilateral according to the extent

and situation of the tumour, should, it is stated, be performed in two stages, the first operation for making a breach in the cranial wall being followed, after an interval of four or five days, by incision of the dura mater, by exploration of the cerebellum and the posterior cranial fossa, and finally, if practicable, by extirpation of the tumour. In 17 out of 49 collected cases of cerebellar tumour in childhood, craniectomy, it was reported, had resulted in cure. The authors of this paper, while doubting the completeness of the recovery in all these cases, believe that the results on the whole are very encouraging in face of the difficulties of the operative treatment and the malignity of some forms of cerebellar tumour. It is stated that in more than a half of this number of cases the operation had been long delayed after the first appearance of decided symptoms. Better results, the authors hold, will be obtained from a deep and widely-spread conviction amongst surgeons that cerebellar tumours are malignant and operable affections.

250. Thrombosis of the Cavernous Sinus.

JACKSON (*Ophthalmology*, January, 1909) says that thrombosis of the cavernous sinus arises without sepsis as the result of general blood conditions. Septic thrombosis occurs by extension from the other cerebral sinuses, from otitic disease, from the nasal sinuses, from furunculosis, and by infection from diseased lids or orbital contents. The signs are almost entirely ocular, the chief being pain, oedema of the lids, chemosis, and extreme exophthalmos. A moderate degree of optic neuritis may be present, and venous engorgement is common. Vision may or may not be impaired. The condition usually spreads to the other eye by way of the circular sinus, this is pathognomonic of the disease. The author does not discuss treatment, which is purely surgical; if the cavernous sinus be not drained, an operation described by Dwight as by no means very difficult, death is almost certain in septic cases. The sinus is exposed by an operation similar to Rose's method of exposing the Gasserian ganglion.

251. The Operative Treatment of Papillo-Oedema.

DE SCHWEINITZ AND HOLLOWAY (*Univ. of Pennsylvania Med. Bulletin*, January, 1909) publish observations upon the operative treatment of papillo-oedema (choked disc), more especially by decompressing trephining, and from their own experience and that of others this operation, with the removal of the growth if possible, is regarded as affording the most satisfactory treatment for the purpose of preserving vision in all cases not due to a toxic or constitutional disease, but depending upon increased intracranial tension. The importance of early interference is insisted upon, since the prognosis is most favourable in the first, second, or third stage of the condition, and good vision must not be regarded as a reason for delay, since in the very earliest stages processes may have begun which unchecked would lead to degenerations of the nerve and ultimately to blindness and atrophy. Should, however, the operation have been postponed until the fourth or fifth stages, operation is indicated, for, although the prognosis as to sight is then unfavourable, there is the chance of preserving such vision as remains, while without it blindness is a certain result. As to whether it is possible to detect a commencing papillo-oedema prior to the first stage, ophthalmoscopic examination cannot alone be relied upon, but a careful investigation must also be made of the visual field, colour perception, light sense, size of the blind spot, etc.; but the difficulties attending such early diagnosis are increased by the fact that an incipient papillo-oedema may be masked by a corresponding general retinal oedema or be extremely hard to distinguish from a simple hyperaemia. In spite of occasional unfavourable results, patients with papillo-oedema dependent upon increased intracranial tension should be urged to submit to operation, since without such interference blindness is sure to result. Twenty-one cases of cerebellar tumour, or cyst, and 22 cases of cerebral tumour, cyst, or abscess, were investigated, of a few of the more illustrative of which short notes are given.

252. Decompression in Choked Disc.

ROBINSON (*Ophthalmology*, January, 1909) reviews our present knowledge of choked disc, which he defines as "optic neuritis due to tumours, etc., of the brain." It is always associated with rise of intracranial pressure. This is communicated to the sheath of the optic nerve, and causes a lymph stasis; the veins get compressed, and congestion of the papilla ensues. The author agrees with Horsley that these cases should always be decompressed to save the sight, even when the primary disease must of necessity be fatal.

OBSTETRICS.

253. Symphysiotomy and Hebosteotomy.

RUNGE (*Berl. klin. Woch.*, December 13th, 1908) prefers pubiotomy, more recently called "hebosteotomy," to symphysiotomy. Hebosteotomy was first practised by Gigli with a saw of his own design. In the open operation, which differs in technique from the subcutaneous, the os pubis is laid bare by a transverse cut through the soft parts; Gigli's saw is guided by means of the fingers passed round the bone, which is then sawn through. Bumm and others, carrying out an entirely subcutaneous operation, pass a specially constructed bent needle between the labia major and minor, two fingerbreadths from the clitoris, close to the descending ramus of the os pubis. The index finger of the other hand controls the advance of the point of the needle from outside the vagina. After emerging above the os pubis near the pubic hair, Bumm's modified saw is hooked into an opening in the needle. This is drawn back with the saw and the pelvic bone sawn through. The open method is more complicated and carries greater danger of infection, but haemorrhage is more readily arrested than in the subcutaneous operation. The latter is technically very simple and may be carried out in private, asepsis being almost guaranteed. The wound may be merely dabbed with collodium or a light bandage applied, but in the open method greater care is needed. A haematoma in the course of the puncture track must be avoided by a vaginal tamponade and a firm pressure bandage, which is indispensable for the first twelve hours. Later less stress is laid on absolute rest, as, with slight movability of the divided bones, the scar is less firm and more lasting expansion of the pelvis is attained. Most authors believe that bony union replaces connective tissue after the first week. In hebosteotomy considerable tears of the vagina may be caused by the sharp ends of the bone during the passage of the head; others may be due to rigidity of the soft parts, and would probably occur apart from the operation. Some injury of the vagina and bladder may be avoided by pressing the thighs together to prevent the pelvis gaping too wide during the passage of the head. Punctures of the bladder caused by the hebosteotomy needle heal almost spontaneously, and haemorrhage from the corpus cavernosus is usually readily controlled. The space between the divided ends of the bones averages two to three fingerbreadths. Permanent widening depends on whether a broad callus or connective tissue scar forms. Hebosteotomy should only be undertaken after exact observation of the course of labour has shown that the child is viable and less dangerous methods are impossible. In primiparae Bumm performs Caesarean section to avoid damage to the soft parts caused by hebosteotomy. The latter he employs in cases of contracted pelvis, where the conjugata vera is not less than 6.75 cm., or in cases of normal pelvis with a giant child. After the operation, which should be undertaken on that side on which the occiput is expected, immediate delivery is often indicated, and forceps should usually be applied. Comparing it with symphysiotomy, the degree of pelvic contraction is the same. The technique and after-treatment of hebosteotomy are simpler, healing of the wound surer, and danger of infection less. After subcutaneous hebosteotomy one can wait with far better conscience for spontaneous delivery than in the case of symphysiotomy, and it may be carried out in cases with fever, where, Zweifel says, symphysiotomy is contraindicated. The power of walking is regained much earlier in hebosteotomy. It may be practised by an experienced accoucheur, with good assistance, in a private house, which is practically impossible with symphysiotomy.

254. Detachment of Cervix and its Influence on Subsequent Labours.

GILLES (*Comptes Rendus de la Soc. d'Obst. de Gynéc. et de Pédiatr. de Paris*, etc., January, 1909) followed up the case of a patient who became pregnant five times after this grave accident had occurred in the course of her first labour. On that occasion, in October, 1900, the membranes ruptured prematurely, and the forceps was applied on account of rigidity of the os and lingering labour. In the course of extraction the vaginal portion of the cervix was completely torn off. The child weighed over 7 lb., and was saved; the curette had to be used, and the patient not only recovered but became pregnant for a second time, and was delivered at term—fourteen months after her first confinement—in December, 1901. Labour lasted 7 hours 15 minutes, the fetal head dilating spontaneously the false os, which had thick, irregular borders. The placenta was expelled by expression. The child weighed nearly 6 lb.

The *third* labour occurred in August, 1903, in the ninth month. The membranes ruptured prematurely, as in the previous and all the succeeding labours; yet labour ended spontaneously in five minutes, and the child, which weighed less than 5 lb., was living. The *fourth* labour occurred in March, 1905; the patient had become pregnant without any menstrual period appearing after the last pregnancy. Labour lasted half an hour, and the child, weighing over 6 lb., was delivered spontaneously. The *fifth* labour occurred in May, 1906, in the eighth month; delivery was spontaneous and very speedy; there had been hydramnion; the fetus weighed a little over 4 lb. The *sixth* labour—the fifth after the circular detachment of the cervix—occurred in March, 1908, in the eighth month. As before, the membranes ruptured early, the presentation was vertex, and the circular orifice, which represented the os externum, still had thick borders. Labour lasted three hours, ending spontaneously, and the child weighed 7¾ lb.; a battledore placenta followed. This case showed how little, if at all, complete avulsion of the vaginal cervix might influence subsequent pregnancies and labours. Indeed, some of the labours in this case were unusually uncomplicated. There was some discussion, when Gilles's report was read, about the relative gravity as to future labours, of surgical and traumatic amputations of the cervix. The former had often a prejudicial effect, premature rupture of the membranes having frequently been noted.

GYNAECOLOGY.

255. Myoma of Vagina: Hydronephrosis.

HALBAN (*Zentralbl. f. Gynäk.*, No. 16, 1909) recently reported at a meeting of a medical society a case with a suggestive clinical history. A maiden lady aged 36 had undergone nephrectomy for hydronephrosis of the right kidney six years before she came under his care for dysuria, which had caused her much distress for several months. Blood had repeatedly been observed in the urine. The vagina was blocked by a mass as big as a fist, and the portio vaginalis of the cervix could hardly be reached by the finger. The mass was tough, tuberous, not tender, and not freely movable. The mucosa of the anterior wall of the vagina was firmly adherent to its surface. The uterus, of normal size, was anteverted and quite distinct from the mass, which reached upwards to the superior border of the symphysis pubis. Halban made a deep incision along the vaginal wall, and enucleated the mass with ease. It was a tumour over ½ lb. in weight, a typical myoma free from any glandular elements. Halban was not sure whether it had developed in the tissues of the vaginal wall or in Gärtner's duct. The base of the bladder was laid bare by the enucleation, and it was noticed that the right ureter was atrophied. The relations of the tumour accounted for the dysuria, and Halban believed that the hydronephrosis for which the right kidney had been removed might have been caused by pressure of the tumour on the corresponding ureter. It transpired that the vagina had not been explored when the kidney was extirpated; therefore Halban considered that the vagina and rectum should always be carefully examined in cases of renal tumour.

THERAPEUTICS.

256. A Malignant Neoplasm Treated by "X" Rays.

AT a meeting of the Medical Society of Munich, Mader reported the result of the treatment of a malignant new growth of the upper air passages by Roentgen rays, and demonstrated the result by showing the patient (*Muench. med. Woch.*, March 23rd, 1909). The patient was a man, aged 48 years. On December 3rd, 1907, he consulted a throat specialist on the advice of his practitioner on account of slight pain in the throat, difficulty in swallowing and some roughness in the throat. At first no objective signs were discovered, but after a few weeks a tumour was seen to develop low down on the posterior pharyngeal wall. There were no palpably enlarged glands. Iodide of potassium failed to bring about any improvement, and on January 25th, 1908, a portion was excised for microscopical examination. This proved to be a squamous epithelial cancer, and the radical removal of the tumour was undertaken two days later. On April 6th the growth had recurred and had become larger than before. Mader admitted the patient on May 7th. He found a tumour measuring about 4 mm. by 2 cm. situated low down on the pharyngeal wall, close to the larynx. The surface was uneven, ulcerating, and covered with a sticky, purulent, greyish-yellow exudation. There was not much pain, but considerable difficulty in swallowing was experienced. No enlarged glands were felt, but the scar from the operation bound the tongue down to the side. The patient was treated in nine sittings by means of Mader's special pharyngeal Roentgen apparatus. Each sitting occupied from sixty to eighty minutes, and was made up of short exposures of from five to twelve minutes with short intervals between. A pause of about two weeks to allow the reaction to pass off was made before the next sitting was undertaken. The technical details of the treatment were: Induction coil, 40 cm.; Walter transformer, 110 volt current in front of the transformer; 1 to 2 ampères at a focal distance of from 8 to 10 cm.; slow mercury interrupter (from 200 to 300 in the minute), and tubes of varying hardness. After the fourth sitting the tumour was seen to be smaller. It had been growing steadily up to the time when the treatment was begun. After the eighth sitting the practitioner reported that after the swelling of the reaction had gone down scarcely any growth was to be seen. The ninth sitting succeeded in removing the last traces of a tumour, and the patient was in excellent health—had no pain or other symptom on November 25th, 1908. The rays were applied directly from the fauces. The rays were directed so that they could act intensely on the affected area. Mader does not give a description of the special tubes, as he demonstrated them at the meeting. From the text it appears, however, that the tubes are completely screened off, and the rays are only allowed to pass through a small window. The prolongation of the instrument is passed into the mouth and so directed that the window looks straight at the tumour. He compares his method with that of Hélot and Payenneville, and shows that the advantage of his is that the rays are directly applied, that no pain is produced, and that no anaesthetic is required; all of these do not apply to the French instrument. In dealing with the general question, he finds that *x* rays are only useful in a small number of laryngeal or faucial tumours. He believes that this treatment should only be employed under given conditions, and sets up an indication as follows: Operative treatment should be undertaken in all cases in which a chance of removing the whole growth is present, and in which the age and strength of the patient permits of the interference. *X*-ray treatment is permissible when it is doubtful whether surgical means can succeed, when the age and strength of the patient scarcely justify an operation, or when from any cause a considerable danger to life is produced by operation. He instances a case which he treated three years ago by *x* rays, and succeeded in causing the tumour to disappear. A small recurrence has recently taken place, which is at present being successfully re-treated by the same means. Lastly, *x* rays are indicated in all cases in which operative treatment is refused, when the condition is hopeless, or when a recurrence after operation has taken place.

257. Arsacetin in the Treatment of Syphilis.

G. HEYMANN finds that, although the value of arsenic in the treatment of syphilis has been recognized by most authorities, practically the only preparation of arsenic which has hitherto been extensively used is atoxyl (*Deut. med. Woch.*, December 10th, 1908). This drug has certain disadvantages, of which the following are put forward: (1) The mucous membrane of the intestinal tract is irritated and nausea and vomiting and diarrhoea are produced; (2) the uropoietic system is irritated, and nephritis, dysuria, etc., are produced; and (3) the nervous system is attacked, and giddiness, polyneuritis, and optic neuritis, followed by blindness, are produced. Ehrlich found, when experimenting with atoxyl in animals infected with trypanosomes, that among a number of derivatives of this substance arsacetin exercised at least the same curative properties and was considerably less toxic. Arsacetin is the (p) acetyl-amino sodium phenyl-arsanilate, is free from arsenious and arsenic acid, and is not dissociated by boiling. It is soluble in cold water to the extent of 1 part in 10, while hot water takes up 3 parts in 10. The injections are undertaken with a 20 per cent. solution into the gluteal muscles, 3 c.cm. being injected at each dose, equalling 0.6 gram of the substance. The solution has to be warmed before use to dissolve all the crystals, and the syringe and needle must also be warm, so that the substance is not thrown out of solution. Heymann has attempted to determine what curative power arsacetin possesses in syphilis in man and what its degree of toxicity is. He applied it in a number of cases of primary, secondary, and tertiary syphilis. In 20 out of 31 cases he

succeeded in obtaining a rapid and obvious curative action of the drug. Broad condylomata, papules on the mucous surface of the mouth, and various forms of rash were seen to disappear in a short time under its influence. On the other hand, although the total quantity used in the treatment did not exceed 7.2 grams, 6.0 grams failed to influence gummatous affections at all. The rapid beneficial influence in the above-mentioned cases, however, did not persist, and recurrences of the symptoms within a fortnight of discharge from hospital were met with. The repetition of the treatment, however, proved of no value, and mercury had to be employed in the recurrences. In 7 cases he found it necessary to interrupt the treatment on account of symptoms which pointed to intoxication. Headache, nausea, oliguria, albuminuria with blood and casts in the urine, giddiness, and pains in the abdomen and extremities were seen in these cases. In none of these cases did any bad effects persist on discontinuing the injections. He therefore comes to the conclusion that arsacetin acts rapidly in influencing the symptoms for the time, but that this action is not durable. In 23.6 per cent. of his cases symptoms of intoxication compelled him to discontinue the application of the drug.

258. The Food Value of Eggs.

S. AUFRECHT AND FR. SIMON (*Deut. med. Woch.*, No. 53, Jahrgang 34) find it a matter of surprise how few works there are dealing with the food value of eggs, the extent to which they can be absorbed, and their digestibility. Uffelmann carried out a series of observations, but his results were vitiated by the fact that his patient suffered from fever during the whole period. Penzoldt and Prager investigated the length of time for which eggs were retained in the stomach. If it be granted that the length of time for which food is retained in the stomach is a measure of its digestibility, lightly cooked eggs are the most digestible, next come raw eggs, then buttered eggs, and finally hard-boiled eggs and eggs in an omelette. Such experimental data are not, however, conclusive as to the true food value of eggs. More effective investigation is that which includes the examination of the urine and stools of a person on an egg diet. Rubner experimented on a student, 24 years of age and weighing 46 kilog.; on each of two consecutive days the student ate 42 hard-boiled eggs, with a weight of 1896.2 grams, a nitrogen-content of 41.5 grams, and a fat content of 206.7 grams. The amount of the nitrogen excreted in the urine or stools on both days was 45 grams. The percentage loss by the stools of nitrogen and fat was 2.9 and 5 per cent. respectively, as compared with 2.6 and 19.1 per cent. respectively on a meat diet. Thus, according to Rubner, the nitrogen of hard-boiled eggs is absorbed to about the same extent as that of meat, but the fat is much better absorbed than that of meat. More recently Lebbin has published results which are approximately the same as those of Rubner. The authors of the present article have made a series of experiments which are of greater practical interest than those described above, because in actual life no person is ever put upon a diet consisting solely of eggs. The authors' investigation lasted for a total period of seven days; the person experimented on—one of themselves—was for three days on a measured mixed diet; for the next two days the diet was altered only in so far that the meat—150 grams, containing 43.65 grams of proteid and 29.85 grams of fat—was replaced by 8 eggs which had been boiled for three minutes, and which contained 52.29 grams of proteids and 49.8 grams of fat. In the third period of two days the lightly cooked eggs were replaced by raw eggs. The mean daily nitrogen intake during the three periods was 11.35 grams, 12.73 grams, and 12.73 grams respectively. Of this the proportion of nitrogen which was not absorbed was during the three periods 5.22, 3.81, and 3.1 per cent. respectively, and the proportion of fat not absorbed was 14.39, 6.25, and 4.09 per cent. respectively. The mean daily loss of nitrogen was 1.273 grams, 1.535 grams, and 1.815 grams respectively. The mean daily nitrogen loss was thus proved to be proportional, not to the amount of nitrogen taken in, but to the amount absorbed. Both in the meat and in the egg periods the nitrogen was better absorbed than the fat. The absorption both of nitrogen and of fat was least in the meat period, increased in the lightly cooked egg period, and increased again, though only to a small extent, in the raw egg period. The practical lesson of these investigations would be that lightly boiled eggs and raw eggs have a higher food value as part of a mixed diet than a corresponding amount of meat, but that the superiority of raw eggs as compared with lightly boiled eggs has been much overvalued. Eggs deserve to be much used, both in disease and in health, on account of the ease with which they are digested, their high food value, and the extent to which they are absorbed.

PATHOLOGY.

259. Milk Anaphylaxis.

BESREDKA (*Ann. de l'Inst. Pasteur*, February, 1909) finds that when guinea-pigs are sensitized to milk the intracerebral injection of milk ($\frac{1}{4}$ to $\frac{1}{10}$ c.cm.) produces the symptoms of anaphylaxis, with a fatal result in a few minutes. Unlike blood serums, milk does not lose its toxicity after heating to 100° C. It is still highly toxic at 120°, and its toxicity is not markedly diminished until the temperature exceeds 130°. The sensitizing power of milk submitted to temperatures varying from 100° to 130° exhibits the same gradations as the toxicity. Sensitization does not take place when the milk is administered per os or per rectum. Milk possesses a vaccinating power which is retained even after heating to 130° for fifteen minutes. The specificity of the anaphylactic reaction is not absolute for milks of a given kind; thus, guinea-pigs made anaphylactic with cow's milk react to goat's milk. The casein possesses sensitizing, vaccinating, and toxic properties, just like the whole milk. The whey sensitizes in some conditions, but not in others; it always vaccinates, and is never toxic. The active principle of the whey is contained in all probability in the substance usually called lactoprotein, which is easily reabsorbed in the intestine. Anti-anaphylactic vaccination is accomplished by administering whey or whole milk either per rectum or per os; it is rapidly effective, absolutely harmless, and does not sensitize.

260. The Pancreas in Diabetes Mellitus.

R. L. CECIL (*Journ. of Exper. Med.*, March, 1909), from a study of the pathological anatomy of the pancreas in 90 cases of diabetes mellitus, arrives at the following conclusions: (1) Anatomical lesions of the pancreas occur in more than seven-eighths of all cases of diabetes mellitus. (2) When lesions are found, the islands of Langerhans constantly show pathological changes (sclerosis, hyaline degeneration, infiltration with leucocytes, and hypertrophy). (3) in some cases (12 out of 90) the lesions are limited to the islands of Langerhans. (4) In 16 cases associated with hyaline degeneration of the islands of Langerhans the average duration of the disease was three and a half years; and in 46 cases with sclerosis of these bodies the average duration was $3\frac{11}{12}$ years. In 6 cases associated with an infiltration of leucocytes the average duration was eleven months. (5) Destructive lesions of the islands of Langerhans may be associated with compensatory hypertrophy of other interacinar islands. (6) Peculiar adenoma-like hypertrophy of the islands of Langerhans occurred in a small proportion of cases (7 out of 90), and were associated with adenomata of the thyroid gland in 2 cases, and of the pituitary body in one. (7) Diabetes mellitus occurring in association with haemochromatosis (bronzed diabetes) is referable to pigmentation and destruction of the islands of Langerhans. (8) In 12 per cent. of the cases the pancreas exhibited no distinctive pathological change, but in approximately one half of these instances it was noted that the size of the gland or the number of islands was much less than normal. (9) Fifty per cent. of cases of diabetes mellitus occurring before the age of 30 years are associated with lesions of the pancreas; 75 per cent. of all cases of diabetes in which the pancreas is normal occur before the age of 30 years; 97 per cent. of cases occurring after the age of 30 are associated with lesions of the pancreas, and 86 per cent. occur in association with chronic interacinar pancreatitis accompanying arterio-sclerosis. (10) Interacinar pancreatitis, which occurs in 73 per cent. of cases, is almost constantly associated with arterio-sclerosis, and gangrene of the extremities, which occurs with one-fourth of cases of interacinar pancreatitis, is referable to the same cause. (11) Chronic interlobular pancreatitis, when associated with diabetes, is accompanied by sclerosis or hyaline degeneration of the islands of Langerhans. (12) Diabetes in association with myxoedema or with exophthalmic goître may be referable to a lesion of the pancreas—namely, chronic interacinar inflammation with sclerosis of the islands of Langerhans; diabetes in association with acromegaly may be referable to a lesion of the islands of Langerhans—namely, sclerosis and hyaliane degeneration with adenoma-like hypertrophy.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

261. Intestinal Sand.

MYER AND COOK (*Amer. Journ. of Med. Sciences*, March, 1909), from a study of the literature and from their own observations in a case in which "intestinal sand" was a constituent of the faeces, do not consider it a clinical entity nor productive of any definite train of symptoms. The faeces in their case—that of a woman aged 24—were dark brown in colour, firm in consistency, and contained a little mucus and from 1 to 1½ grams daily of fine granules resembling sand, which gradually disappeared after being present in the motions for a fortnight. The patient was constipated, and complained of great fullness of the abdomen, which was tense and slightly tympanitic. The right kidney was movable, and the stomach was in moderate ptosis but otherwise negative. There was no family history of gout or rheumatism. The sand-like granules were intimately admixed with the stool, gritty to the touch, translucent in appearance, and varied in colour from light yellow to the colour of uric acid crystals or garnets. A chain of such sand was found, together with two or three fibro-vascular bundles histologically identical with banana tissue. By the ingestion of bananas sand identical with that found in this case could be produced experimentally, being obtained from the faeces in teaspoonful to tablespoonful quantities after the ingestion of one or two bananas, and persisting in gradually diminishing amounts for several days. On treating a thin section of the banana with ferric chloride small masses of a garnet-coloured substance, each contained within a cell membrane, were obtained. In the stem as well as in the fruit there are milk tubes, consisting of a row of vertical cylindrical cells containing large homogeneous, highly refractive resin balls, suspended in a fluid rich in tannin. The secretions of the stomach and intestine act upon these similarly to the ferric chloride, hardening the resin and producing an insoluble tannate which, after digestion of the cell walls, is liberated as a grain of sand.

262. Tuberculous Cirrhosis of the Liver.

THE association of pulmonary tuberculosis with cirrhosis of the liver has often been noted in man, and also in rabbits or guinea-pigs infected with tubercle bacilli the liver is often cirrhotic. S. Isaac (*Frankfurter Zeit. f. Path.*, Wiesbaden, 1908, ii, p. 125) remarks that the cirrhosis is usually atrophic, although Hanot's hypertrophic cirrhosis has been recorded, and may simulate tuberculous peritonitis very closely. He details the case of a man of 45 who had had "fever" and syphilis in Java twenty years before, and early in January, 1904, had cough and fever. In March the cough had gone, but the fever persisted, and the patient's liver was enlarged. Rest in bed, iodide, and mercurial inunctions were prescribed, but the liver did not lessen. No history of alcoholic excess was obtained. In June the liver reached to within a fingerbreadth of the navel, its edge was sharp, its surface smooth; the spleen was much enlarged; the heart was hypertrophied; the lungs showed no abnormal physical signs. The morning temperature averaged 96°, the evening 102°; hepatic abscess was suspected, and an exploratory laparotomy was performed in July, 1904. The liver was found to be very large, soft, with a faintly-nodulated surface, but no abscess could be found by puncture; the spleen was six to eight times the normal size, and slight ascites was present. The patient left the hospital in September; for about six months he had had much cutaneous itching, latterly with an urticarial eruption; the lungs showed nothing abnormal. In October jaundice set in, and the pruritus was more troublesome. The fever continued, and puncture of the liver was tried, with negative result; antisyphilitic treatment was given several times, without improvement. In November, 1906, an effusion appeared in the right pleura, no evidence of pulmonary phthisis having till then been found. In March, 1907, the patient sank, dying at the end of June. At the obduction 5 pints of ascitic fluid were found in the abdomen; the great omentum was rolled up and adhered to the liver, and contained numerous small yellow-stained tubercles, as did the mesentery and peritoneum. The liver weighed 21 lb., and was extensively adherent to the diaphragm, smooth on the surface, deeply jaundiced, and showed no normal acinous structure; the cut surface exhibited small areas 2 to 4 mm. in diameter separated by sunken fibrous septa, without any macroscopic caseation, and gave no amyloid reaction; the liver tissue was very tough, the kidneys showed many small yellow tubercles; the lungs showed extensive tuberculous lobular pneumonia, but no old tuberculosis. The spleen contained typical solitary tubercles, as did the bronchial glands. Microspically the liver showed extensive destruction of the liver cells, much infiltration with small round cells, countless typical small tubercles in the acini and in the interacinar tissue, and a few newly-formed bile ducts in the parts where the inflammatory reaction and congestion were most marked; other parts of the liver showed mainly fibrosis. The bile ducts and vessels exhibited much inflammatory invasion of their walls. The fibrosis generally extended into the acini of the liver, only exceptionally being limited to the periphery of the lobules. Tubercle bacilli were freely found in the liver, both in the tubercles and in the aggregations of small round cells. Isaac regards the case as a primary haematogenous tuberculosis of the liver, running its course in three and a half years, associated with hypertrophic cirrhosis, and spreading to the lungs only a few months before death.

263. Mitral Stenosis and Congenital Malformations.

HEITZ AND SEZARY (*Arch. des Maladies du Coeur des Vaisseaux et du Sang*, December, 1908) report the following 2 cases of mitral stenosis associated with congenital malformations. The first case was a man of 48 who had been in good health until two years previously, when he began to suffer from shortness of breath, palpitation, and loss of strength and flesh. On examination of the heart there was evidence of dilatation of the left auricle to percussion and an increase in the extent of cardiac dullness, especially transversely. A diastolic murmur was heard, and the second sound was permanently reduplicated. In this patient it was noticed that there was a left-sided hemihypertrophy of the body. The left arm and leg were increased both in length and in thickness, and the left shoulder was larger than the right. The left hand was 1½ cm. longer than the right, and the digits of the left hand were larger than were those of the right. The left great trochanter was in a higher position than the right and there was a certain amount of luxation of the left hip. The left leg exceeded the right in length by about 6 cm., and the circumference of the former exceeded that of the latter by from 1 to 1½ cm. The left foot was longer than the right. The face, neck, and thorax were normal. The second case was that of a youth 17 years of age, who appeared much younger. His hair was poorly developed and his testicles were small. In this patient there was found a completely bifid uvula and an anomalous union of the two sides of the mandible. In the region of the symphysis menti were found two longitudinal projections separated by a very deep median depression. In this patient there were found signs of mitral stenosis—thrill, diastolic murmur, and reduplication of the second sound. The authors admit that the presence of congenital malformations, such as those described in association with mitral stenosis, does not prove that the mitral stenosis was of congenital origin, as the latter may have resulted from an infection in the early years of life. Still, in such cases as these, in the absence of any definite cause for the mitral stenosis, one should bear in mind the possibility of its being the result of conditions occurring during intrauterine life.

SURGERY.

264. Hepatic Cancer Mistaken for Abscess.

MICHELEAU (*Gaz. Hebd. des Sci. Méd. de Bordeaux*, March 7th, 1909) relates the following case: The patient was a man of 34, very strong and robust until seven months before coming under observation, when he was suddenly seized with severe pain in the region of the left kidney, accompanied by haematuria, sufficiently profuse to form intravesical clots and subsequent retention of urine. The renal colic did not return, but the left kidney was somewhat painful as well as tender on pressure, and the haematuria continued for about two months, causing

anaemia, pronounced weakness, and very considerable emaciation. About the time when the pain ceased, or a little sooner, a rise of temperature was observed, about 102° even at the outset, sometimes preceded by rigors, and followed by profuse sweats. Renal tuberculosis was diagnosed by two surgeons, but Koch's bacillus could not be found in the urine. When seen by Micheleau he had been suffering from gastric disturbance for some days, the appetite being irregular, and the gastric region swollen and painful, with vomiting of mucus and of food, but without haematemesis or melaena. He had formerly suffered from haemorrhoids, which had ceased to bleed some time before his illness began. An operation on the kidney, which had been thought of, was abandoned because the symptoms had left the renal region for that of the stomach, and the aspect of the patient indicated marked cachexia, either from a serious suppurative process or from some neoplasm. The temperature oscillated round about 102°, with a morning remission of nearly two degrees; the pulse ranged between 100 and 110, and there was no marked sweating. The epigastrium presented a uniform tumefaction, extending to the right under the false ribs, which it pushed forward, the left side being free. There was spontaneous pain, dull and aching, but seldom acute, and there was no radiation, as, for example, towards the right shoulder. On palpation the pain increased so much that deep pressure was impossible, but a uniform smooth swelling was made out, apparently continuous with the liver, the lower border of which could be felt three fingerbreadths below the ribs, no fluctuation being perceptible at any point. No other organ appeared to be affected, and the diagnosis of liver abscess was made, probably on the inferior surface, as there were no radiations of pain towards the shoulder. This idea was encouraged by the fact of a past history of some malaria and dysentery, incurred on foreign stations during the seven years of his service with the fleet. Some more definite physical sign was sought for in vain; examination of the blood was not efficiently carried out, and as variations in the size of the liver hypertrophy seemed to point to an abscess, operation was decided upon. Exploratory punctures, under chloroform, revealed no pus, and the laparotomy was proceeded with. The internal half of the right lobe, corresponding to the external swelling, consisted of a lardaceous mass, very hard, almost wooden; and the diagnosis of cancer, not formerly thought of, became obvious. After some further futile punctures, the wound was closed. The incision healed by first intention, and no subsequent complication intervened, but the patient died ten days afterwards. It was ascertained later that a sister had previously died, at the same age, of general melanotic cancer, but there was no other item of family or individual history which would have thrown light on the true nature of the case, and Micheleau is of opinion that under similar conditions the same course should be pursued.

265. Momburg's Method of Compression.

Momburg made the suggestion that simple constriction around the waist would serve the purpose of controlling haemorrhage in operations on the hip-joint and other parts in or close to the pelvis, and by avoiding a compressing disc or pelotte no risks would be associated with it. G. Axhausen relates his experience of the method (*Deut. med. Woch.*, December 3rd, 1908). He applied the constriction when the patient was under the anaesthetic. He used a rubber tube doubled, and wound it twice round the body. The leg was raised before it was applied, and the tube was drawn tight until the femoral pulse could no longer be felt. The operation was a resection of the acetabulum and of the neighbouring portion of the pelvic bone as far up as the anterior superior spine of the ilium. The operation was performed bloodlessly. No difficulty was experienced in applying the compression, and no ill effects were seen during or after the operation. So far, therefore, the method has proved highly useful.

266. Mesocolic or Retrogastric Hernia.

W. J. Mayo (*Annals of Surgery*, April, 1909) reports 2 cases of the rare form of intra-abdominal hernia known as mesocolic or retrogastric, both of which came under his observation and were successfully treated by operation in the course of 1908. Notwithstanding the peculiarity of the conditions in these two instances, the lesions revealed by laparotomy were practically identical. The 2 cases, the author states, present points of interest not only on account of their rarity, but also because of the primary pathological condition which appears to have been the important factor in the production of the hernia. The hernia in each case was revealed by a median laparotomy practised for the relief of very severe and long-continued gastric disturbance. In the first patient, a female aged 59, a large rent of the mesocolon was found, through which the small intestine, with the exception of its proximal 3 in. and its distal 12 in., and the whole extent of the mesentery had passed into the lesser sac of the peritoneum behind the stomach and out through a second opening in the gastro-hepatic omentum. Each opening was about 5 in. in diameter, and the margins were round and smooth. In the subject of the second case, who was a female aged 32, about 5 ft. of small intestine had passed behind the stomach through an opening in the transverse mesocolon, carrying the peritoneum of the transverse mesocolon ahead as a sac, the firm ring of which was at the loop of the middle colic artery. In the first case the stomach was completely covered by small intestine; in the second case the organ, which was in front of the herniated intestine, was prolapsed and dilated so that it filled almost the entire abdomen and pelvis. After the performance of gastro-enterostomy, which was indicated in both cases by duodenal ulcer, the cavity occupied by the small intestine was in each patient closed by suturing the margins of the opening in the mesocolon to the posterior wall of the stomach. Both patients, the author states in his comment on these cases, presented typical conditions of Glénard's disease. There was undoubtedly in each a primary prolapse of the stomach. The duodenal ulcer, which existed in both, had undergone a chronic perforation, causing adhesions and fixing the duodenum beyond the stomach, just as the cardiac end is held normally by the oesophagus. The obstruction in each case was extreme, the huge stomach hanging down in front of the intestines. The abdominal muscles exerted great force in the frequently repeated efforts to expel by vomiting the large accumulation in the stomach of undigested food, and caused compression of the intestines behind this viscus, which was confined at each extremity and much prolapsed in its middle part. In this way, it is held, pressure was brought to bear on the transverse mesocolon upward in the line of least resistance, causing this peculiar form of hernia.

OBSTETRICS.

267. Cardiac Disease in Pregnancy and Labour.

Harrar (*Bulletin Lying-in Hosp., City of New York*, September, 1908) writes that cardiac disease, with failing or lost compensation, occupies an important position among the complications of pregnancy and child-birth. While these broken compensation cases are not half so numerous as those of placenta praevia or eclampsia, they occur twice as frequently as those of severe accidental haemorrhage. The situation presents a mortality for the mother which is appalling, and a fetal mortality greater than is generally supposed. It is not unusual to discover chronic valvular disease with perfect compensation in the ordinary routine examination of *ante-partum* cases. The etiology of the defect, as a rule, antedates conception. Leaving chronic endocarditis with compensation and no symptoms aside, the writer has collected a large number of cases of valvular disease, in which loss of compensation has occurred during pregnancy or labour, including those few instances of chronic endocarditis with symptom-free pregnancy, in which collapse occurs shortly after labour. All the cases were suffering so severely as to require treatment in bed. They exhibited the symptoms which arise in ordinary cases of failure or lost compensation. These included general weakness, anorexia, dyspnoea, palpitation, and oedema. Later symptoms showed dilatation of the heart, rapid irregular pulse, oedema of the lungs, cough, haemoptysis, cyanosis, albuminuria, and in many cases acetonuria and anaemia. The immediate mortality of 82 cases treated was 30 per cent., without taking into consideration the number of cases that succumbed after discharge from the hospital in the first few months succeeding the puerperium. Serious loss of compensation can occur during the latter months of pregnancy, and yet the woman may be put into serviceable condition and go on normally with pregnancy; the author reports 15 such cases which were discharged in good health undelivered. His report includes 75 cases treated in hospital. The prognosis improves the further along in pregnancy the woman is at the time of the first breakdown in the circulatory balance. In 9 cases the first loss of compensation occurred during the ninth or tenth month with but 1 death. In 9 others the breakdown occurred before the sixth month, and of these 7 died, and only 2 recovered. In women giving a history of broken compensation in previous pregnancies or before the

present one, the mortality is increased to 60 or 70 per cent. The age or the para of the woman appears to affect the outlook but little, except that labour in primiparae, being more prolonged, the strain on the heart is greater. It is wise to advise against future conception, though not always justifiable to induce abortion in a later conception unless symptoms arise. When the circulation fails and dilatation begins, the variety of lesion seems to make little difference. The heart with double mitral lesion is the more prone to fail, and also the more able to recover; the simple aortic lesions are the most infrequent, with the best recuperative power. Combined mitral and aortic disease is the most serious of all when compensation fails. The mortality for the child is dependent upon its prematurity and the frequent necessity for artificial delivery. The metabolism of the child is not affected by the uncompensated maternal heart. It is rare that a patient with compensated cardiac defect dies in labour, therefore a clear record of perfect compensation is a valuable asset in any *ante-partum* case with heart disease. Prophylaxis is of importance, and includes the treatment of endocarditis during the stage of compensation. Pregnant women with chronic valvular disease must lead a quiet, regular life, avoiding physical exertion and emotional excitement. Fresh air, ventilation, prohibition of alcohol, a digestible, nutritious diet, and scrupulous attention to the skin and bowels—in fact, the ordinary hygiene of pregnancy is to be well enforced. Resistant exercises and Nauheim baths are of great value when as yet there is no loss of compensation. In 75 of the cases under consideration compensation became broken in 72 before admission to hospital; 69 of them recovered under treatment from the first lapse. Rest in bed is more important than drugs. It is more difficult to prevent a second loss of balance than it is the first one. After the patient is up no exertion except short slow walks should be allowed. A tri-weekly examination of the urine should be made, and upon the slightest return of albumen, or oedema or dyspnoea, the patient should return to bed. The medical treatment includes bleeding from the arm, when there is cyanosis and acute dilatation, and the use of the ordinary drugs, digitalis, strophanthus, and caffein. Calomel and the salines give relief, while morphine and codeine combat dyspnoea and restlessness. Where there is suppression of urine the introduction of physiological salt solution into the rectum is of great service. Nitroglycerine, oxygen, and dry-cupping are also available. Labour should only be induced if the compensation is not promptly restored with rest and therapeutic measures; or, if compensation once lost has been regained, when it may be done at the thirty-sixth week to secure easier labour; or if the compensation fails markedly before the sixth month; or in desperate or moribund cases in the interest of the child. Anaesthesia is generally necessary for induction, and it is wise to use large quantities of oxygen with the smallest possible amount of chloroform. During the second stage of labour a hypodermic injection of strychnine and digitalis may be given, while the management of the third stage must depend greatly upon the patient's condition. If there is dilatation of the right heart with a weak irregular pulse, *post-partum* haemorrhage is rather to be encouraged. But if there is no dilatation, but pallor and a small weak pulse, it is best to put on a tight binder with a folded compress in the epigastrium to maintain the intra-abdominal pressure and avoid the tendency to engorgement of the large abdominal veins. If the patient is anaemic, as so many are if there is any kidney trouble, it is best to prevent all bleeding if possible. After delivery the patient should be closely watched and given oxygen freely and emergency stimulation as required. She is liable to collapse at any time in the first twenty-four or forty-eight hours. Chronic valvular disease is in itself not a serious condition in the child-bearing woman, but timely prophylaxis is all-important. When loss of compensation once occurs the danger is increased a hundred-fold. If the balance can be preserved during pregnancy labour need not be feared, but given one or more severe disturbances of the balance and the prognosis becomes very grave.

GYNAECOLOGY.

268. Gonorrhoeal Conditions in Women.

ANDREW J. LOVE (*Med. Record*, April 17th, 1909) says that gonorrhoea in women is the chief cause of sterility. It is also a frequent cause of sterility in males, and absence of child-bearing is more often due to the inability of the male than of the female to produce a fecundated ovum. It is responsible for most cases of salpingitis and specific endometritis. In most cases that come early to the doctor the woman may be cured by confinement to bed, cleanliness, open bowels, and swabbing the parts with a mild antiseptic fluid. But most cases are neglected until the infection has gone up into the uterus. The periuterine tissues have become infiltrated, abscess formation has begun, the tubes have had their ciliated epithelium destroyed, and sacculation or abscess has closed the lumen. The ovaries have become cystomata, with prolapse and fixation. When the disease has gone no higher than the cervix, pregnancy lights up the infection, which passes on to tubes and ovaries. Latent gonorrhoea may infect another person who has connexion. Eighty per cent. of men between the ages of 18 and 28 have had gonorrhoea. In some persons one attack gives partial immunity to another attack. Prostitutes will be thus protected, while they will communicate the disease. Their disease is generally in the latent form. A fruitful source of sterility is vulvovaginitis in little girls, which is gonorrhoeal, and causes them to develop into cases of infantile uterus, with imperforate tubes and ovaries that do not mature normal ova. It may be communicated by sleeping with the mother who is infected.

THERAPEUTICS.

269. Biliary Extract in Exophthalmic Goitre.

REVILLET (*Lyon Méd.*, November 15th, 1908) having had good results from the use of an extract of bile in the treatment of the tachycardia of pulmonary tuberculosis, has employed it recently in 2 cases of Basedow's disease. The daily injection of 2 c.cm. of biliary extract in the first case slowed the heart from 200 to 120 beats per minute in twenty-eight days. For the next two months the injections were given daily for fifteen days with intervals of five days. At the end of this time the pulse-rate was 96 to 100, the appetite and strength had improved, there had been an increase in body weight, the goitre had diminished in size, and the tremor, which was distressing before treatment, had disappeared. In the second case ten injections diminished the pulse-rate from 140 to 110. After a month's treatment the pulse-rate was 96, the goitre was diminished in size, and the exophthalmos was much relieved. When the treatment had been suspended for a fortnight, however, the pulse-rate began to rise again. Although Revillet admits that he is not justified in generalizing from such a small experience, he thinks his results encouraging enough to induce others to make a trial of the treatment.

270. Treatment of Ophthalmia Neonatorum with Protargol.

MOTAIS (*Bull. de l'Acad. de Méd.*, May 4th, 1909), discussing the treatment of ophthalmia neonatorum, pays tribute to the service rendered by nitrate of silver, which has been so long used; he, however, considers it dangerous when ulceration of the cornea is present. He considers that great credit is due to Darier for his researches in the organic compounds of silver—namely, argyrol, collargol and protargol, the latter of which he considers by far the most valuable. The method he adopts is as follows: The lids are washed frequently with a lukewarm solution of weak permanganate of potash 25 cg. to 1,000. If the secretion causes the lids to adhere they should be smeared with iodoform ointment. Every six hours he uses 2 drops of a 20 per cent. solution of protargol, no matter whether a corneal ulcer be present or not; this never does the cornea any damage. In severe cases with abundant secretion, and especially if the cornea is affected, he uses the protargol drops every three hours, and he considers that accidental injury of the cornea is far less liable to occur than if the lids be painted. If this treatment is regularly carried out the secretion is diminished from the first day, and in three, or at most four, days there is but little discharge. The protargol is used at half its strength for several days after the case is apparently cured. Should recurrence take place, which he has never seen if the treatment is fully carried out, he reverts to that first recommended. If a corneal ulcer is present it quickly heals. Atropine is also recommended in order to avoid the occurrence of posterior synechiae. He claims for this treatment that it is simple, without danger, and it gives the best results. He describes ten typical cases.

271. Multiple Subcutaneous Electrolysis.

KROMAYER states that the ordinary method of destroying hairs by electrolysis has the disadvantage of producing a scar which remains visible. In order to limit this

unsightly appearance it is usual to interrupt the process before the hair is completely destroyed, and in this way so-called "recurrences" are frequently seen (*Deut. med. Woch.*, December 24th, 1908). Even when the superficial layer of the hair bulb is destroyed the hair may grow again. He therefore considers that it would be better if the whole process could be carried out subcutaneously, so that it would not be necessary to interrupt the action until the hair was completely and finally destroyed. For this purpose he has constructed electrolytic subcutaneous needles, which are coated up to within from 2 to 10 mm. of the point with varnish. This coating is so thin that it does not hinder the introduction of the needle. Usually electrolytic epilation is performed with one needle at a time, but he sees no reason why several may not be employed simultaneously. He therefore has his needles connected with 15 cm. of the thinnest copper wire, which can be brought in contact with the copper wire of the other needles. Having formed a bundle of such needles, he seizes each one in rotation by artery forceps and inserts it into the hair follicle. When all the needles required are in place the wires are connected with the battery and the current turned on. In applying a number of needles simultaneously it is necessary to adjust the current according to the number of needles acting. It has been found that a current of 5 milliampères destroys a hair completely in one minute. The complete destruction of the hair can be ascertained by pulling lightly on the hair shaft. The hair will be found to be held tight. On pulling somewhat more strongly, the hair comes away and is found to end sharply, as if cut off. No trace of the hair bulb may be found, as this should have been destroyed by the electric current. Before the process is complete a hardening around the needle is felt, and soon a definite nodule is seen. If this nodule begins to be transparent, it is time to remove the needle, as there is danger of the cutis becoming involved in the necrosis and of the skin "burning through." If five needles are applied at one time the current will be divided into fifths, and it will therefore be necessary to allow a 25 milliampère-minute current to act. It is wise to apply the strongest current well tolerated, and the author usually begins with 1 milliampère, and increases this up to 5, 10, 20, and 40. The highest he has used was 50 milliampères. It must be remembered that the stronger the current the shorter will be the time during which it is necessary to apply the current to destroy the hair bulb. There is no theoretical reason why as many as 100 needles should not be used, but as a rule the current becomes divided irregularly, and uncomfortably strong currents run through some needles, while too little passes through others. At times he finds it wiser to use only a few needles, for example five, and to apply them continuously. After one has done its work on one hair bulb it is withdrawn, and is inserted into another follicle, and so on. In this way there are always five needles acting. In this case it is impossible to calculate the current by milliampère-minutes, but the process must be determined by the test mentioned above. Care must be taken that at least 2 mm. of varnish-covered needle penetrates the skin, so that 4 mm. of needle (including 2 mm. of bare steel and 2 mm. of varnished steel) lies in the skin. Since there is some danger of producing extensive necrosis of the cutis, it becomes impossible to destroy all the hairs in one area in one sitting. After a few have been destroyed, it is necessary to wait for a while until the inflammatory reaction has disappeared. This may take from a few days to one or two weeks. The method does not produce any scar formation if properly carried out, is easy to carry out, and saves a great deal of time as compared with the usual method of electrolysis.

272. The Incompatibility of Iodide with Pagenstecher's Ointment and Calomel.

IT is well known, but constantly forgotten, that if yellow oxide of mercury ointment or calomel be placed in the eye of a patient who is taking iodide in any form, violent irritation is produced, and the morbid process instead of being arrested is accentuated. It is very easy when treating a "strumous" child suffering from phlyctenulae with yellow oxide ointment locally, and with cod-liver oil and syrup of iodide of iron internally, instead of using syrup of phosphate of iron. Next day the child returns with all the symptoms aggravated. Yvert (*Rec. d'Ophtal.*, August, 1908) in a lecture at Dijon treated of this subject. He told his hearers that the iodide acted upon the mercury compound, and produced a mercurous iodide which in the presence of an excess of iodine rapidly decomposed into free mercury and the extremely caustic mercuric iodide. The same unpleasant experiences occurred when oxy-cyanide of mercury was used locally to wash out the bladder of a patient taking iodide. Hollander (Berlin Society of Medicine, May 16th, 1906) pointed out that this double decomposition with the formation of nascent mercuric iodide could be utilized therapeutically in cases of tubercle of mucous membranes, buccal, laryngeal, and cystic. He found that, especially in tubercle of the bladder, excellent results were obtained. The patient is given a teaspoonful of a 5 per cent. solution of iodide of potassium a quarter of an hour before the local treatment, which consists of the insufflation of calomel or its injection in oily emulsion. Yvert concluded by warning his hearers never to put calomel or yellow ointment into an eye until they had ascertained that the patient had not taken iodine, either from a medical man's prescription or in one of the patent medicines which often contain it.

PATHOLOGY.

273. Brieger's Cachexia Reaction.

IN publishing their third communication on the reaction of the serum of carcinomatous and other patients in inhibiting tryptic digestion, L. Brieger and J. Trebing (*Berl. klin. Woch.*, December 21st, 1908) use the term "cachexia reaction." They record the effect of pancreatin on the serum of carcinomatous persons both when operative treatment has been carried out and when this has been found impossible. They found that in 5 cases in which the antitryptic power of the serum was high, the administration of pancreatin was able to depress the titer to the normal limit. The general condition improved during the exhibition of the pancreatin, and in 2 cases the body weight even increased for a time. They explain that the pancreatin had obviously acted beneficially on the cachectic condition without influencing the carcinomatous process in the smallest degree. In 5 further cases the antitryptic titer was 1.10, and after the exhibition of 20 grams of pancreatin, this rose to 1.15 or more. They say, "it appears by this that the antitryptic reaction may be regarded as the quantitative indicator (Gradmesser; literally the measurer of the degree) of cachexia, in that cachectics whose titer can be influenced by pancreatin may perhaps be regarded as possessing a more favourable prognosis than others whose high antitryptic titer is maintained in spite of the pancreatin treatment; in the first-named category, it is possible that the carcinomatous process is progressing slowly." They further give the results of their continued observations on the serum of cancer patients, which show that in cases of carcinoma with histological confirmation of the diagnosis the reaction was marked; in suspicious cases with clinical diagnosis alone the reaction was just positive, and in three sarcoma cases it was also just positive. Diagnosis cannot be made on the reaction alone, but they find that the cachexia reaction with observations on the influence of pancreatin, when compared with the clinical symptoms, may be useful. It was found in a case which was examined before and after operation that a high titer before the operation fell to normal after the lapse of several months. The patient was doing well and was putting on weight. In non-carcinomatous tumours the serum yielded low values. Lastly, they record the titers of the serum of cachectic patients suffering from other diseases than carcinoma. These include diabetes and phthisis. The antitryptic titer was higher than normal.

274. Incubation Period of Syphilis.

LEVADITI AND YAMANOUCHI (*Ann. de l'Inst. Pasteur*, October, 1908) have endeavoured to find some explanation for the length of the incubation period in syphilis by the study of lesions produced experimentally. They have selected as material for observation the keratitis induced by inoculating the virus into the anterior chamber of the eye of the rabbit, and the lesions produced in anthropoids and monkeys by inoculations over the eyebrow. They find that the incubation period is not due to the existence of any cycle of evolution necessary for the *Treponema pallidum*, but corresponds to the slowly progressive development of the histological lesions which are set up by the multiplication of the specific organism. This multiplication takes place at the commencement only to a small degree, owing to the difficulty which the parasites find in assimilating the new nutritive medium and in accustoming themselves to the change of environment. The active multiplication of the parasite and the concomitant termination of the incubation period is due to the completion of those changes in the vessels and newly formed cellular elements which assure for the *Treponema* a plentiful supply of nutritive material.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

275. Paralysis of Left Recurrent Laryngeal Nerve in Mitral Affections.

OSLER (*Arch. des Maladies du Coeur des Vaisseaux et du Sang*, February, 1909) points out that there are two kinds of conditions in which valvular affections of the heart may give rise to the impression that there exists an aneurysm of the aorta. First, in aortic insufficiency the throbbing of the arch may lead one to suspect aneurysm, particularly in young subjects, where the systolic pulsation of the aorta may be very marked; secondly, in mitral lesions, when great dilatation of the left auricle exists, and when this dilated chamber compresses the left recurrent laryngeal nerve. In most of those cases reported in which with mitral disease there has been left recurrent laryngeal paralysis, it has been shown that the nerve has been compressed between the aorta and the dilated auricle; in some the enlarged pulmonary veins compressed the nerve, and in a case of Fischauer's the left branch of the pulmonary artery compressed the nerve. In some cases both recurrent nerves have been paralysed, and such cases have been explained by assuming that the weight of the dilated and engorged heart has drawn down the arch of the aorta and its large branches so as to irritate and cause atrophy of the recurrent nerve loops. The author quotes three cases which have come under his direct observation. The first patient, a woman of 45, had suffered from heart disease for some years. She was fat, the hands were somewhat cyanotic, and there was marked dyspnoea on exertion. The apex beat could not be felt; a faint thrill was detected, and the area of cardiac dullness appeared to be increased; there was no pulsation to be seen or felt to the left of the sternum, nor was there any tracheal tugging. An apical presystolic murmur was heard, also a systolic murmur conducted to mid-axilla. The voice was double-toned, and the left vocal cord was paralysed. Death took place about fifteen months later, and at the *post-mortem* examination the mitral orifice was found stenosed and the left auricle greatly dilated; there was no aneurysm. The second case was a woman, aged 27, who gave a history of scarlet fever and whooping-cough in childhood, and a mild attack of diphtheria some months previously, since when she had been ailing. When seen by the author the typical signs of mitral stenosis were present, and for a year her voice had been altered in character; this was found to be due to paralysis of the left recurrent laryngeal nerve; the apex beat was in its normal position; there was a well-marked presystolic thrill, and cardiac dullness commenced at the third rib. A loud presystolic murmur was heard, followed by a ringing first sound. A short, loud systolic murmur was also present, and the pulmonic second sound was accentuated. About one year later recurrent paralysis still existed, and death occurred about six months afterwards. The third case was a man, aged 48, in whom an aneurysm was suspected. There was oedema of the legs and of the bases of the lungs, dyspnoea and signs of grave asystole when seen by the author. Cardiac pulsation was seen in the third, fourth, fifth, and sixth left interspaces, and also in the second left interspace. On auscultation the double murmurs of aortic and mitral disease were found; the voice was bitonal, and the left recurrent nerve paralysed. Improvement in the patient's general condition occurred; *x*-ray examination showed a very much enlarged left auricle and absence of aortic aneurysm. At the *post-mortem* examination, on opening the pericardium, the appendix of the right auricle was found to reach to the left sternal margin, and the rest of the anterior surface of the heart was formed by the right ventricle; the aortic valves were incompetent; the mitral orifice admitted two fingers, the tricuspid three. All the cavities of the heart were dilated, and the heart generally much hypertrophied. The left auricle was enormous, the aortic valves were sclerotic, the mitral flaps thickened, also the chordae tendineae, and the mitral orifice somewhat narrowed. The left recurrent nerve appeared sclerotic and of an opaque white appearance in that part which was compressed between the left auricle and the aorta.

276. Thrombosis of the Portal Vein.

HECHT (*Wien. klin. Woch.*, 1908, p. 944) reports the fatal illness of a girl aged 15 years, who had a fall downstairs when 6 years of age. Directly after this accident she vomited dark-red fluid, and attacks of vomiting continued until she was 10. Then they ceased for several years, appearing again when the patient had reached the age of 14. She became emaciated, and when admitted into hospital Hecht noted that the abdomen was distinctly prominent in the region of the epigastrium, the stomach was distended with gas, the liver seemed beneath its normal size, whilst the spleen was enlarged, firm, but not tender. On the day of admission there was free vomiting of dark-brown blood. The temperature was above normal, and the urine, at first free from abnormal constituents, contained nucleo-albumen later on. Blood was frequently found in the motions. On the eighth day oedema of the left foot was observed; ascites followed, the oedema extended to the thighs and vulva, the spleen enlarged rapidly, and the liver also increased in size. The patient died after several attacks of haematemesis. There was thrombosis of the splenic vein. The portal vein was also thrombosed, as had been diagnosed before death; the process had begun in a small varicose pouch, which held a soft clot. On dissection, it was found that the portal vein ran an abnormal course; inferiorly it lay external to the common duct, then it twisted round so as to lie behind that duct, and curled once more forwards, crossing the cystic duct, and entered the liver between the cystic and the hepatic ducts. The cystic duct pressed on the portal vein, and was seen to be the cause of the thrombosis. Hecht, in conclusion, declared that in this case the vein might easily have been mistaken for the common duct had an operation been performed.

277. The Opsonic Index in Lobar Pneumonia.

F. DE MARCHIS (*Lo Sperimentale*, Florence, 1908, lxii, p. 681) has investigated the opsonic index in 17 patients with lobar pneumonia, daily in 10 of them. Of these 10, 4 died, 5 recovered, and 1 recovered after a metapneumonic empyema had been operated on. In all he found that the opsonic index fell during the first few days, rose again before the crisis, and reached the normal again a day or two after the crisis; the administration of quinine made no difference in the index. No rise took place in the cases that did badly, though recovery might occur after the index had fallen to 0.35. In the case developing an empyema after the pneumonia, the index none the less rose to about the normal after the crisis. De Marchis thinks that some care must be exercised in drawing prognostic criteria from the behaviour of the opsonic index in lobar pneumonia; no direct connexion between the index and the degree of leucocytosis attained seemed to exist, and the variations in the index were the same for Fränkel's diplococcus and for *Staphylococcus pyogenes aureus*—hence the opsonin is not specific. He found that many of the leucocytes of the pneumonia patients were incapable of ingesting either the diplococcus or *Staphylococcus pyogenes aureus* in the earlier stages of the disease; and that a spontaneous phagocytosis of these microbes would take place if they were exposed to the leucocytes for some hours in the incubator.

SURGERY.

278. Appendix Abscess in a Young Child.

CHURCHMAN (*Johns Hopkins Hosp. Bull.*, February, 1909) records a case of appendicitis in a child, aged 27 months, with an analysis of 8 other cases under 5 years of age which occurred in the Johns Hopkins Hospital. Originally brought to the hospital with painful micturition of twelve months' duration, becoming worse five days previously, a diagnosis of vesical calculus was made. Examination of the abdomen was negative, and although *x* ray suggested a calculus, none was found after careful search under ether, and the symptoms disappeared. A week later, fever, abdominal distension, pain and tenderness, especially on the right side, developed, typical of acute perforative appendicitis with abscess, and an appendectomy and drainage was performed. Except for an early post-operative reaction (rapid pulse and temperature, with negative abdominal condition), possibly due to iodoform poisoning, convalescence was uneventful and recovery complete. The substitution of plain gauze drains for iodoform gauze remedied the above condition, and points

to the wisdom of using plain gauze in young children. Short notes of the other 8 cases are given, while of the whole 9, 6 were boys. Five of the cases gave no historyof previous attacks, and the disease was of a severe type when first recognized, perforation having occurred in all. In 4 only did the diagnosis present difficulties, tuberculous arthritis, general peritonitis, cerebro-spinal meningitis, and vesical calculus being the differential diagnosis respectively. Not only were the urinary the only symptoms in the case recorded, but the diagnosis of calculus was supported by *x* rays, and abdominal examination was negative and the temperature normal. The probable pathology was acute appendicitis characterized by pelvic peritonitis, causing bladder symptoms, which, after subsiding for a time, recurred with rupture and abscess formation extrapelvic. The possibility of appendicitis must be borne in mind in the differential diagnosis in children presenting urinary symptoms or signs of possible hip disease. Palpable resistance on the right side per rectum is a frequent sign, and points to the importance of rectal examination in any doubtful case. As regards prognosis, there is less reason for operative delay in these cases than in adults, as the outlook is good in all such cases unless general peritonitis has occurred, when it becomes almost hopeless.

279. Sunshine and the Eye.

E. O. Sisson discusses (*Ophthalmology*, January, 1909) the effect of intense sunlight upon the eye of the blonde type, in a paper which is preliminary to a research he is undertaking. He reviews the arrangements which Nature has made in a large number of animals to protect the nervous elements of the eye from the deleterious action of the violet and ultra-violet rays. He arrives at the following conclusions: (1) Normal eyes contain pigment which absorbs all rays which are unnecessary for vision. (2) The macula where accurate vision is centred is the best protected by pigment deposits. (3) One of the functions of the visual purple may be to protect the delicate nerve tissue of the retina from light. (4) Pigment does not exclude dangerous actinic rays, such as those from the uviol mercury vapour lamp. (5) That these actinic rays are destructive to living protoplasm. (6) The anatomy and function of any organ at a higher type can be better understood by a study of the same organ in a lower. (7) The amount of pigment in the eyes of animals and birds and the presence of other structures to protect their eyes from excessive light varies with their habits and the region they live in. (8) We have ample proof that light injures eyes. (9) Glasses protect the eyes because glass absorbs the ultra-violet rays. (10) The facts adduced show the necessity for pigment in the eyes; the density of the pigment must be in proportion to the degree of light to which the man has to be exposed.

280. Anterior Dislocation of Shoulder.

Thomas (*Amer. Journ. of Med. Sciences*, February and March, 1909) discusses at length the etiology, pathology, and treatment of habitual or recurrent anterior dislocation of the shoulder. Seeing that the lesion is due to a traumatic, cicatricial, anterior hernial pouch of the capsule, the object of any operation for its relief must be to obliterate the hernial protrusion, and at the same time any free or attached joint body that may be present can be removed. The essential cause of such recurrences is a relaxation due to the addition to the original capsule of the new cicatricial portion which bridges over the gap between the margins of the tear produced by the first dislocation. In 34 cases collected from the literature the operation of capsulorrhaphy, or shortening the capsule, was followed by success in 33 of the cases, and in the one apparent failure recurrence took place a month later only after a degree of violence sufficient to have produced dislocation in a normal shoulder. In all of these the incision employed either divided the deltoid or separated it from the pectoralis major, but the axillary incision was followed in the author's case as being the better route, since division of the deltoid is avoided and the site of the original capsular tear is better exposed, while a smaller incision is required and, if drainage is needed, it is dependent. The only muscle divided was the subscapularis, and the anterior circumflex vessels were divided between two ligatures in order to allow of retraction inwards of the large vessels. This route exposes exactly the part of the capsule torn, which in the case recorded presented a protrusion. While good results have followed merely reefing the capsule without opening it, exploration of the joint is advisable in order to remove any movable joint body that may be present. The opening in the capsule is closed by sutures, either by overlapping the edges or after excision of a piece of the capsule. Prior to operation the patient had had nine dislocations, and these even recurred while he was wearing a leather shoulder brace which had for its main object the limiting of abduction. A fortnight after the operation all bandages were removed and a leather brace substituted for a week, and in the fourth week he was allowed to use his arm freely without strain. In the sixth week forcible movements were tried, and he was able to hold the arm in the vertical position in abduction with the arm alongside the head, and nine months after the operation he had full use of the arm and shoulder, swimming, boxing, and swinging a sledge hammer.

281. Scoliosis and Infantile Paralysis.

M. Firmin Carles (*Rev. d'Orthopédie*, January, 1909) reviews several cases of spinal curvature in infantile paralysis, together with the current French theories concerning the causes of scoliosis in association with this disease. The article is illustrated with photographs of several of the patients, and the study of the distribution of paralysis by the electrical methods is very complete. The author concludes that all these cases cannot be attributed to the variation in the length of the legs which follows a unilateral paralysis, but that they are primarily paralytic and due to unilateral, partial, or complete paralysis of spinal muscles. The scoliosis that is a result of inequality of the limbs is long in making its appearance, is compensatory in character, and easily cured by levelling the pelvis; whereas, on the contrary, the scoliosis that is primarily paralytic makes its appearance early after the incidence of the acute poliomyelitis. The views of Messner and Kirmisson—namely, that the convexity of the curve is in general directed towards the sound side, and only occasionally towards the side of the paralysis, and that the cause of this is contraction of the unaffected muscles—are not acceptable to the author. His opinion is that the scoliosis is due to unilateral, partial, or complete paralysis of spinal muscles, and that the convexity of the curve, according to the case, is directed towards the sound side or the paralysed side, and is determined by three factors: (1) The extent of the paralysis, whether total, unilateral, or limited to a definite region of spinal muscles and unilateral in that region; (2) the degree of rapidity of onset and intensity of lesion on one or other side (atrophy of affected muscles and unilateral atrophy of the bodies of the corresponding vertebrae); (3) the contraction of the spinal muscles of the sound side which are the antagonists of the paralysed group on the opposite side, and symmetrical with them

OBSTETRICS.

282. Management of Occipito-posterior and Transverse Positions of the Fetal Head.

Knapp (*Bull. Lying-in Hosp. City New York*, September, 1908) writes that one of the commonest causes of prolonged labour is the lack of rotation of the fetal head either before or after entering the superior strait. Though the pelvis may be large, and the other conditions normal, the mother may exhaust herself, attempting to push out a head which does not advance owing to its abnomal position. From a half to two-thirds of all occipito-posterior cases rotate spontaneously, and interference is unnecessary unless the mother or child shows signs of exhaustion. It is not always possible to tell whether a case is going to rotate or not, but by watching it for a certain period we can tell whether there is any change in its position. Other conditions being normal, if there is no change for two hours after the beginning of the second stage, it is hardly probable that there will be any, and it is best to interfere. In these cases special attention should be paid to the condition of the mother and child, and interference is desirable rather early than late. Frequently a woman will not get a fully-dilated cervix by her own efforts, especially in occipito-posterior cases, when she may even die from exhaustion before the cervix is dilated. If the head is small in relation to the pelvis, one may wait longer for rotation than when the head is large. An absolute diagnosis is necessary for a successful cephalic application. This is not always easy to make. Even when familiar with the sutures and fontanelles, the bulging of the occasionally unruptured membranes and the caput hamper the examiner. If the head is well down in the pelvis, two fingers will as a rule suffice, though it is necessary to be perfectly familiar with the sutures and fontanelles. The anterior or large fontanelle has four sutures running from it, while the posterior has three. When one

is sure that he feels the posterior fontanelle, it is necessary to distinguish the sagittal suture; as a rule its edges may be worked upon themselves by the fingers, while the lambdoid suture is generally overlapped. The diagnosis is only complete when the size of the head and the size and shape of the pelvis are made out. If the examination cannot be completed with two fingers, the patient should be placed under chloroform, and the whole hand used. If the head be floating above the brim, and by our examination we decide that it can come through, the first step is to rotate it with the hand. The external hand can assist by attempting to rotate the body through the abdominal wall. The tendency of these heads is to again assume the occipito-posterior or at least the transverse position after the hand has been withdrawn; if this occurs, the use of forceps is indicated, or a version must be performed. Where the pelvis is irregular or the fetal head soft, a version is preferable; where the head and pelvis are normal, the writer usually tries forceps, but if a satisfactory application is not quickly made, he resorts at once to version. If after rotation the head remains anterior, the position is occipito-posterior, and delivery takes place accordingly. In some cases the head becomes lodged in mid-pelvis; the best procedure is to rotate with the hand and apply the forceps, or it may be possible to bring the head to a transverse position by the hand when complete rotation is impossible, and to make a cephalic application from the transverse position. Rotation by means of the forceps is liable to injure the head and the maternal soft parts. In rotating by the hand or the forceps, slight upward pressure should be made. In a large number of cases where the head has spontaneously reached the perineum in an occipito-posterior position, it may be rotated to an anterior position by either the manual or the instrumental method.

283. Pregnancy and Phthisis.

NEITNER (*Zentralbl. f. Gynak.*, No. 8, 1909) has collected, in a Strassburg thesis, 27 severe and 34 milder cases of tuberculous pulmonary phthisis detected in a series of 5,720 pregnant women. In 41, or 67 per cent., of the cases the lung symptoms grew worse during pregnancy. In every case where the larynx was involved the patient's condition became aggravated in the puerperium. In 18 cases pregnancy was interrupted by an obstetric operation; in 3 by Caesarean section, for pelvic contraction in 2, and for cancer of the cervix in the third; in 8 by induced abortion, and in 7 by induction of premature labour. In 16 abortion or premature labour occurred simultaneously. In Neitner's series induction of abortion gave the best results, but this obstetric operation was mostly practised on patients where the lung disease was not advanced. The stage of phthisis in any particular case is of great importance in regard to artificial interruption of the pregnancy.

GYNAECOLOGY.

284. Primary Cancer of Female Urethra.

MAISS (*Zentralbl. f. Gynäk.*, No. 3, 1909) recently read before the Breslau Gynaecological Society a report of a case of this rare condition—the twentieth authentic instance of primary urethral cancer recorded in medical literature. He observed that Karaki had published a monograph on cancer of the female urethra, including 57 cases, amongst which 19 were without doubt primary, 4 more were of doubtful origin, and 34 were classed as vulvo-urethral cancer. Maiss's patient was 46 years of age; she had given birth to four children spontaneously, the last labour occurring fifteen years before she came under the reporter's care. The catamenia were normal. She consulted Maiss for dysuria of less than two months' duration, ending in retention, so that for several days no urine could be passed without the catheter. A tumour of the size of a walnut pushed out almost the entire anterior wall of the urethra; it was of firm consistence and was found to proceed from the posterior wall. The urethral canal was so narrow and the obstructing tumour so tough that even a slender catheter could not be passed without some force. There was no disease of the internal organs and no evidence of glandular infection. The tumour was excised. Three weeks later, as there was incontinence of urine, an artificial urethra was made, but the results were at first unsatisfactory. The patient was discharged from hospital with a urinal, but returned for inspection six weeks later in good health and able to hold her urine.

THERAPEUTICS.

285. The Limitation of Common Salt in Diet as a Therapeutic Agent.

THE employment of an exclusively milk diet in the treatment of disease was first scientifically suggested by Karell in 1866, but was not largely employed by the medical profession. Jacobs referred to this method of treating disturbances of circulation and adiposity last year, and appears to have attracted more notice than Karell did. Mendel (*Muench. med. Woch.*, March 2nd and 9th, 1909) finds that the undoubted benefit which follows the employment of a strict milk diet has been explained in various ways. Some observers have inclined to the view that milk improves the condition of the cardiac muscle, and reduces waste energy of the heart. Others have ascribed the benefit to the peculiarly happy mixture of albumen, fat, and carbohydrate, and consider that the little stimulating effect of milk is responsible for its diuretic action. Romberg and his followers, however, regard these grounds as secondary, and believe that milk acts in virtue of its poverty in sodium chloride. Mendel argues that if Karell's method is really dependent on a limitation of sodium chloride, the same beneficial results would be obtainable when any other diet containing very little common salt is given. He cites a case in support of this contention. The patient was suffering from myocarditis. The quantity of urine increased rapidly, and the anasarca and ascites disappeared in response to a course of Karell's treatment. Six weeks later the symptoms recurred, and as the patient objected strongly to the milk diet, he was given a diet consisting of coffee with milk, meat, bread, butter, potatoes, and fruit, without any additional salt. The symptoms disappeared in response to this diet as rapidly as they had done under the milk diet. A second case is mentioned in support of the same idea. Here it was shown that an excessive intake of soduim chloride was chiefly responsible for symptoms of dropsy, etc., while the same disappeared as soon as milk diet was ordered. Milk contains but 1.6 gram of sodium chloride per litre. Mendel claims that it is this small salt content of milk which produces the marked change. In cases of adiposity, without oedema and without any disturbance of the circulatory system, the employment of a diet containing a limited quantity of salt produces increased diuresis and loss of weight. Common salt used to be regarded as an indifferent substance. Javal and Widal first showed that a retention of 10 grams of sodium chloride was capable of producing oedema. It has been shown that if the quantity is reduced to a minimum the osmotic pressure of the fluids in the vessels and tissues increases, and more water is attracted in order to reduce this increased osmosis. It is difficult to determine how far the increased absorption of water, following on an increased intake of sodium chloride, is physiological, and how far it may be considererd to be pathological. Mendel speaks of a hydraemic plethora, as distinguished from a true plethora, by which he means the increase beyond normal limits of water in the organism. The experiments of Cohnheim and Lichtheim lend support to his theory. They found that no apparent changes take place when physiological saline fluid in large quantities is injected into the vessels of animals. The rate of circulation, however, is found to be increased until the organism has reduced the quantity of fluid to normal limits again. If the animal is killed before this takes place, the organs of the abdomen are found to be oedematous, while those of the thorax are natural. Further, when the femoral vein is tied no oedema is seen, but if saline fluid be injected in large quantities after the ligature, the limb swells considerably. Clinical as well as experimental evidence is available, which tends to show that hydraemic plethora in itself does not lead to retention of fluid, but as soon as the circulatory organs are damaged it immediately leads to oedema. Mendel argues that the oedema of acute and chronic nephritis and of heart disease depends on the primary presence of a hydraemic plethora. He applies his arguments to a number of other conditions, including eczemata, burning of the surface of the body, thrombosis of veins, etc. He further shows by means of cases that the action of digitalis is at times only evident when employed together with a limited supply of sodium chloride. The marked effect of a milk diet in cardiac oedema is also illustrated by clinical histories. In speaking of a limited supply of salt, he means from 2 to 4 grams in twenty-four hours. This represents from one-eighth to one-quarter of the normal intake. It is, in his opinion, inadvisable to cut off the sodium chloride altogether.

This is conveniently supplied in milk, but other diets yield similar results. Children stand exclusive milk diets well, and the same applies to adults suffering from acute illnesses. Adults who need a prolonged limitation of salt cannot be kept sufficiently long on milk, and therefore need a mixed diet with little salt. He speaks in the highest terms of the effects of limiting the common salt for a number of disturbances of the circulatory organ, etc.

238. Vitralin, a Disinfecting Wall Paint.

XYLANDER has compared the disinfectant qualities of various wall paints, and has paid special attention to a substance called vitralin, which is, according to the manufacturers, Rosenzweig and Baumann, Cassel, a product of linseed oil varnish with other substances, which hasten oxidation (*Arbeit. a. d. kaiserlichem Gesundheitsamte*, vol. xxix, Part 2, 1908). It contains no resins or copal, and no white lead. It is said to resist the influence of vapours, gases, acids, salts, and sea water. It was compared with white lead and zinc colours, calcium paints, and glue containing paint. The various paints were applied to tiles, oak boards, clinkers, and glass plates in three coats and allowed to dry. After the surface was dry, infection with various bacteria was undertaken. When the plates, etc., were exposed to daylight, tubercle bacilli were killed in three days, as against five days by oil paint, ten days by the other forms of paint. *Bacillus typhosus* and *paratyphosus* were killed in six hours, as against eight hours by oil paint (the other paints did not kill at all), while diphtheria bacilli were killed in four hours by vitralin and in five hours by oil paint, while the other paints took ten days. When kept in the dark, more marked differences were seen, as are shown in the following table:

	Vitralin.	Oil Paints.	Other Paints.
Tubercle bacilli	Killed in 5 days	Not killed in 30 days	Not killed in 30 days.
Typhoid bacilli	Killed in 10 hours	Killed in 12 hours	Not killed in 10 days.
Paratyphoid bacilli ...	Killed in 10 hours	Killed in 12 hours	Not killed in 10 days.
Staphylococci	Killed in 13 hours	Killed in 16 hours	Not killed in 30 days.
Diphtheria bacilli ...	Killed in 5 hours	Killed in 6 hours	Not killed in 10 days.
Anthrax spores	Not killed in 30 days	Not killed in 30 days	Not killed in 30 days.
Streptococci...	Killed in 10 hours	Killed in 12 hours	Not killed in 10 days.

In further experiments, he found that the bactericidal action of vitralin was still present toward the vegetative forms after three months. In the control experiments oil paints also exercised a bactericidal action after the same time, but this was less marked than that of vitralin, save with diphtheria bacilli. The other paints had no action. He was able to show that the presence of oxygen was necessary for the action of vitralin, and that no disinfection took place when carbonic acid gas or hydrogen was used. The action proved to reach an optimum with a medium degree of moisture. Dry air prevented the action within thirty hours, while saturated air only allowed vitralin to kill after twenty hours. Previous soaking of the painted plates, etc., in strong solutions of the ordinary disinfectants, with subsequent washing off, did not lessen the disinfecting qualities of the paint. Xylander therefore speaks in high terms of this paint.

PATHOLOGY.

287. Exudates and Transudates.

ALONZO (*Rif. Med.*, March 29th, 1909) sums up the results of an experimental examination of some of the characters differentiating exudations from transudations. He finds that as a rule the density varies directly with the percentage of albumen. Exudates usually have a greater percentage of albumen than transudates, at least as far as simple effusions are concerned; but effusions are often of a mixed character, sometimes starting as simple exudations and becoming mixed with transudations, or vice versa, or even beginning *ab initio* as mixed effusions; this mixing may be of a temporary or permanent character, according to the nature of the cause. The percentage of albumen forms one means of differentiating between the two types. The albumen found in effusions has a double source, namely, from the blood and from the surrounding tissues. A source of fallacy in estimating the percentage of albumen is the ignorance of what proportion the mass removed bears to the mass of liquid left, the degree of concentration, for example, after the first withdrawal of a transudate the albumen may not only not decrease but increase, which may be due to absorption of fluid and increased concentration of what is left, or to increased outpour of albumen from the tissues and blood due to good nutritive condition, or, on the other hand, if these conditions can be excluded, may be due to the onset of an inflammatory state and admixture with exudate. Later and repeated exploratory punctures show a steadily decreasing amount of albumen; *caeteris paribus*, the longer the fluid remains in a cavity the richer it becomes in albumen. Exudates contain more albumen than transudates, owing to the changes in the blood vessels and tissues brought about by the processes of inflammation. The estimation of the percentage of albumen, although subject to fallacies like other methods, still remains the best means of differentiating between the two classes of fluid, and possesses an absolute value in the case of pure effusions.

288. Reactions of Cobra Venom with Antiserum.

CALMETTE AND MASSOL (*Ann. de l'Inst. Pasteur*, February, 1909) summarize as follows certain observations which they have made on the interactions of cobra venom with the serum of vaccinated horses: (1) The serum of the horse vaccinated against cobra venom precipitates this venom. (2) This precipitate only appears at the moment when the mixture of serum and venom becomes atoxic, and after about one hour at the temperature of the laboratory. It fails to be produced when the serum is in excess. (3) Hence this precipitating reaction may serve to measure approximately *in vitro* the antitoxic value of an antivenom serum. (4) In a mixture of serum and venom, exactly neutralized, the precipitate and the liquid, separated by centrifugalization, are atoxic. (5) The precipitate appears equally well when solutions of unheated venom are employed, and when the solutions of venom are previously deprived, by heating to 76° to 78° C., followed by filtration, of their albumens coagulable by heat, which are atoxic. (6) The atoxic precipitate of serum and venom in the fresh state is insoluble in physiological salt solution, but soluble in water slightly acidulated with HCl or in presence of an excess of venom. (7) The same precipitate, heated to 72° in an acid medium, recovers almost all its previous toxicity. The venom and the antitoxin therefore become dissociated, and the antitoxin is destroyed. (8) In becoming precipitated under the action of the serum, the venom takes up about thirty to forty times its weight of dry serum extract. (9) The toxic precipitate of serum and venom, when separated by centrifugalization and washed, may be preserved in the dry state. In this form it is insoluble in an excess of venom and in acidulated water, but it may be dissolved and commence to split up on digestion by trypsin or papain. If the product of this digestion be heated at 72° in presence of a very small quantity of HCl, the antitoxin is destroyed, whilst the venom is set at liberty, and recovers all its toxicity and its capacity for being neutralized again by antitoxin.

289. Search for Tubercle Bacilli in the Sputa.

VALERIO (*Rif. Med.*, July 27th, 1908), referring to the well-known difficulty of detecting, quickly and surely, tubercle bacilli in the sputum of early cases of tuberculosis, just when it is most important to know, describes certain experiments he has carried out. His object was to find some culture medium which should favour the growth of tubercle bacilli and retard the growth of associated bacilli. Hesse's medium has been highly recommended as a suitable medium for this purpose, but the author believes that there is no ground for this assertion, and that the apparent advantage of Hesse's medium is really due to some substance contained in the added sputa. He believes that sputum contains some nutritive substance which is favourable to the growth of tubercle bacilli. Moreover, control experiments showed that Hesse's medium did not hinder the development of other bacteria. Hence, the practical conclusion is that the quickest and best method of developing tubercle bacilli cultures is to place the sputum for forty-eight to seventy-two hours in a thermostat at 37° C., in a Petre capsule, on a piece of blotting-paper, and examine every six hours. The common organisms found in sputum do not hinder the development of the tubercle bacilli.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

290. Streptococci and the Diseases of Childhood.

J. RITTER (*Berl. klin. Woch.*, April 5th, 1909), who deals with the significance of streptococci in diseases of childhood and their treatment by serumtherapy, states that local suppuration rarely occurs by means of streptococci alone. In the majority of these cases staphylococci are found primarily, and the streptococci occur as secondary infecting organisms. Garré's experiment of causing an infection by rubbing staphylococci into the unbroken skin never succeeds with streptococci. These organisms produce local infections at times, and at other times general infections. This he believes to be due to the differences in the nutrient media, that is, in the tissues, and not to differences in the cocci. In affections of the tonsils, in rheumatism, and in infective processes of the skin and the mucous membranes, the streptococci which are frequently found are always associated with some other micro-organisms. In enteritis and pertussis at times streptococci are found, but in each case their presence can only be regarded as secondary. The significance of streptococci in diphtheritic infections is next dealt with, and the author expresses the opinion that the signal of danger is to be found in the plentiful presence of these secondary invaders. In scarlatina, too, he regards the occurrence of streptococci as accidental and not as a causal organism. The primary activity of streptococci is limited to erysipelas, some forms of fresh local suppuration and acute infections of wounds. He believes, however, that streptococci are practically always the same, no matter what symptoms they call forth. He does not place any confidence on the agglutination phenomenon as a means of differentiating the kinds of streptococci, and concludes that it is only the soil which causes differences in the virulence. Thus, it makes all the difference whether the cocci have been grown in the human tissues or in animal tissues or on artificial culture media. This is the cause of the difficulty in preparing efficacious immune serums for therapeutic purposes. Four different classes have been introduced. First there is the serum gained by treatment with non-virulent cocci derived from human affections (for example, Menzer, Pavel, Moser). Secondly, there is the serum gained by cocci the virulence of which has been increased by passage through animals, but this serum is useless for human streptococcal infections (Marmorek and Aronson's first serum). Thirdly, the serum is gained by means of the original human coccus and also the same coccus, which has been rendered virulent by passage (Aronson's second preparation, Ruppel). Fourthly, there is the serum gained by primary treatment with cocci which are virulent to animals and subsequent treatment with human cocci (Meyer-Ruppel). The first two types are of theoretical, but not of practical, value. The author therefore investigated the effect of Aronson's second preparation, but states that he realizes that Meyer-Ruppel's serum possesses distinct advantages over this one. Although he regarded it as extremely doubtful whether the serum would prove active against a chance strain of streptococci which produced a given infection, he was quite surprised at the good results he obtained in erysipelas. In all he treated 22 children by means of the serum for erysipelas. The dose taken was 20 c.cm. for each 10 kilograms body weight. In 80 per cent. of these cases the symptoms disappeared within two days after the injection, while the rest were cured within three days. Only in 3 cases did a mild rash appear later. In all his cases he was astonished to find extremely little bad after-effects. In four advanced cases of umbilical infection (primary) of infants, the serum was tried, but all the infants died. He obtained, however, apparently good results in secondary infection of the tonsil with the serum. In 34 cases the process rapidly cleared up. Further, he treated 19 cases of scarlatina with scarlatinal serum. Of these, 10 recovered and 9 died. The recovery, however, corresponded to the rapid fall in temperature and disappearance of symptoms, as is seen in mild cases. Details of these cases are given; 14 cases of septic diphtheria were treated with streptococcic serum as well as with diphtheria antitoxin. Although the number of these cases is small, he considers that the results which he obtained justify a continuation of this form of treatment. He considers that the antistreptococcic serum should be employed where other means of treatment fail. In any case it should be employed before the infection is so far advanced that no form of therapy is capable of saving the life.

291. The Heart in Acute Infectious Disease.

ROBINSON (*Amer. Journ. Med. Sci.*, December, 1908) regards the management of the heart during the early period of convalescence from acute infectious diseases as of paramount importance in treatment, since upon the prevention of cardiac dilatation mainly depends the patient's future vigour and well-being. Without ignoring other organs, it must be borne in mind that the heart stands out primarily and essentially in need of careful watching and treatment in the majority of instances, more especially in typhoid, diphtheria, influenza, pneumonia, and scarlet fever, while in acute articular rheumatism there is the added danger of inflammatory complications. The cardiac muscle and its nervous control are generally organically affected if the infectious disease has been severe or of long duration, more or less cloudy changes and fatty degeneration being produced by the various toxic elements associated with the particular disease. Various pathological lesions may exist affecting the cardiac nerves, muscle, and vessels, and it is probable that, in cases where the infectious disease has been grave or prolonged, a relatively acute myocarditis is set up. As to treatment—for example, in typhoid fever—it is held to be wise not to allow the patient even to sit up in bed for a week or ten days after the temperature has reached the normal, and he should not leave his bed until he has sat up in bed several times without causing any considerable changes in his pulse or cardiac action. Increased pulse-rate, irregularity, or intermittence, especially if associated with a soft systolic mitral murmur, accentuation of the pulmonic second sound, or a notable lack of tone in the first sound, are indications for a further period of rest in the recumbent position. Marked slowness of the heart's action requires, if possible, greater care, owing to the liability to cardiac failure; and mental rest is as important as physical, especially in those whose occupation has been pre-eminently an intellectual one. Of drugs, strophanthus by mouth or hypodermically is recommended during the acute attack, followed later by strychnine, coca, or digitalis, and iron when there is evident anaemia. For convalescents in poor circumstances recovering from such diseases the need for institutions more especially devoted to their treatment is urged.

SURGERY.

292. Surgical Treatment of Basedow's Disease.

H. MOSES (*Berl. Klin.*, April, 1909) discusses the value and prognosis of surgical intervention in the treatment of Basedow's disease, and suggests that recourse to the knife is too often neglected or unduly delayed in favour of purely medical methods. The inclusion of this grave and distressing affection in the increasing list of maladies that are now brought under surgical as well as medical care is justified, in the first place, by the fact that of the many different theories of the origin of Basedow's disease, that of Moebius, which assumes a morbid condition of the thyroid body and a morbid change in its secretion, has received the widest acceptance. A remote and primary cause may be found in disease of the sympathetic or some altered condition of the blood, but if, as Moebius holds, the symptoms of Basedow's disease are due to flooding of the organism by a toxic thyroid secretion, removal of the source of this agent is fairly indicated. Operative treatment, Moses holds, is indicated in every case of Basedow's disease, whatever form this may present, when a not unduly prolonged course of medicinal treatment has failed to do any good. Stress is laid upon the necessity of intervening before the development of severe cardiac and pulmonary complications. In operations practised directly on the thyroid body with the object of reducing the amount of secreting tissue, and thus restricting the discharge into the organism of its toxic secretion, it is advisable, the author states, to protect the wound in the neck against infection from the patient's mouth and hair by a small sterilized screen placed just below the

chin. In discussing the choice of the anaesthetic method in such operations on the thyroid, he recommends general narcosis in preference to local anaesthesia, as being more convenient for the surgeon, not more dangerous in this than in any other class of operations, and for the sensitive and restless subjects of Basedow's disease more humane. In the surgical treatment of this disease by direct attack on the gland, hemistrumectomy, or removal of one lobe, has hitherto been the operation of choice. Ligature of the thyroid arteries has not met with much favour. In most instances three arteries have been tied, but some surgeons have secured and divided all four vessels without any serious results. This method is specially indicated in cases of quite recent and not very severe Basedow's disease with a very vascular goître. Jaboulay's operation of exothyropexy, by which the enlarged gland is exposed and displaced but not removed, might do some temporary good as a palliative measure in cases of asphyxia caused by very large goître, but only in very exceptional cases would it, in the author's opinion, be indicated in the treatment of Basedow's disease. Resection of the superior cervical ganglion, which has been practised by French surgeons holding that the morbid phenomena of Basedow's disease are due to a primary lesion of the sympathetic system, is not favoured in Germany. This operation, the author asserts, has technical difficulties, and its results have not been encouraging. The mortality of unilateral strumectomy for Basedow's disease, though it has in the course of the last few years been reduced from about 13 to 1½ per cent., is still higher than that of the same operation in other forms of goître, which in Kocher's last series of 600 cases was not more than ½ per cent. In many cases of the form of goître under discussion the thyroid vessels, especially the veins, are very large and easily lacerable, and the free and continuous bleeding may endanger life, not only directly, but also indirectly by flooding the field of operation and prolonging the work of the surgeon. Partial removal of an exophthalmic goître has been brought into discredit also by frequent instances of sudden death during or soon after the operation. In most instances of this disastrous complication of strumectomy for Basedow's disease, death, the author points out, is due, not, as was formerly supposed, to the action of the anaesthetic, but to the association with the goître of a persistent and hypertrophied thymus. The difficulty in diagnosing this condition sometimes prevents the surgeon from rejecting in a case of this kind the idea of an operation; but, as the author points out, it should be borne in mind that to the subject of Basedow's disease who has not undergone any surgical treatment an enlarged thymus is a constant cause of dread and danger. Another unfavourable condition to surgical intervention, which is attributed to delay in associating surgical with medical treatment, is the advanced development of toxic lesions of the heart and lungs. The post-operative occurrence of so-called thyroid fever has, the author asserts, been seldom observed, and may, it is held, be effectually prevented by proper attention to the aseptic technique of the operation. Moses gives a very favourable report of the results of strumectomy observed in the large majority of patients who have recovered from the immediate effects of the operation. There are good grounds, he states, for full satisfaction in regard to the decided benefits following surgical treatment. Marked signs of improvement are rapidly developed during the first week, after which there is a continuous, though slower, advance. In the course of the first three or four days the pulse frequency falls from 130 to 80. The subjective symptoms are relieved very quickly, the patient becoming calmer and less irritable, and the mental tone being much improved. It is acknowledged, however, that instances of ideal cure in which all the symptoms of Basedow's disease disappear are very rare. Exophthalmos is a very resistant symptom, which, though it may be slightly modified after the operation, usually persists when every other symptom of Basedow's disease has disappeared. In the exceptional cases in which surgical treatment has not influenced the objective signs the general condition is usually much improved and the patient feels as if restored to good health and former vigour.

293. Amblyopia from Mercurial Poisoning.

CORONAT (*Lyon Méd.*, January 24th, 1909) records a case of amblyopia which he believes was due to chronic poisoning by mercury. His patient, a medical man, was accidentally inoculated with syphilis on the eyelid. He took mercury for ten years in large doses, continuing the treatment for three months at a time with no interval longer than a month. At various times he showed signs of the mercurial intoxication, such as colic with haemorrhagic diarrhoea, pyrexia, and a scarlet rash. Later paresis of the deltoids and intercostal pains showed involvement of the nervous system before any ocular symptoms were noticed. Paresis of accommodation occurred five years after the beginning of the treatment. The ocular symptoms were always aggravated by a renewal or increase of the mercurial dosage. In each eye a central scotoma was the first phenomenon. In the left eye, which was first affected, this remained small and unaltered for a year; blindness did not occur till after an aggravation of the intoxication, which was shown by other grave accidents such as vomiting and diarrhoea. In the right eye the central scotoma was uncomplicated until, in addition to the usual dosage of mercury, five injections of atoxyl had been given. The papillary atrophy of syphilis, whether associated with tabes or not, seldom begins with a central scotoma; indeed Coronat believes that where this does occur it is due to a superadded intoxication, especially alcoholism. In tabes, the ophthalmoscopic changes in the papilla are often accentuated when the vision is relatively good. In Coronat's case vision was reduced to mere perception of light and darkness, although the papilla was relatively of good colour. Optic atrophy has not been hitherto considered as a complication of mercurial poisoning, but in the case recorded the dosage was altogether abnormal both in amount and in duration.

OBSTETRICS.

294. The Oedema of Pregnancy.

RUDAUX (*La Clin.*, January 15th, 1909) writes that oedema in obstetrical practice is generally regarded as a symptom of albuminuria requiring the treatment suitable for this affection, or as the result of impeded circulation due to the increase in the size of the uterus and consequent abdominal pressure. There is another form of oedema which is not accompanied by any trace of albumen, and which appears too early in the pregnancy to be due to the presence of the enlarged uterus. The patient will be found to be suffering from some minor ailment of the liver, kidneys, intestines, or possibly the thyroid or suprarenal bodies. Or she will have gastric disturbance, headaches, and neuralgia. A careful examination of the urine will show that, although there is no albumen present, the quantity excreted is below normal. A pregnant woman should excrete from a pint and a quarter to a pint and a half of urine in twenty-four hours, and this quantity often falls to less than a pint. When oedema appears it should be systematically measured. Further examination will show a diminution in the amount of urea and chlorates present, while the arterial tension is higher than normal. Treatment entails rest in the recumbent position, a daily morning dose of magnesia, and diuretic beverages during the day, such as uva ursi, with two teaspoonfuls of lactose. Salt must be omitted from the diet, which, however, may include pepper, lemon, and vinegar, as well as the following articles: Vegetable soups, white meats, fresh-water fish, eggs, potatoes, rice, peas, haricots, carrots, artichokes, and salads, cream and cooked fruits, bread without salt, and as drinks, milk, Evian water, or some other mineral water.

295. Acute Gangrenous Appendicitis Occurring during Pregnancy and Labour.

LOBENSTINE (*Bullet. Lying-in Hosp., City of New York*, September, 1908) considers that attacks of appendicitis are not infrequent during pregnancy. The development of such attacks is favoured by the greater degree of constipation existing under these circumstances. In those cases in which the appendix, from a previous attack, has become adherent to the uterus, tubes or ovaries, such attacks are more likely to be renewed, owing to the increased traction or pressure on the appendix, mesoappendix, or caecum. The milder cases are not easily diagnosed, the pain being mistaken for a threatened miscarriage, a salpingitis, or ureteritis. In the really severe cases one has to remember that at the onset of the attack they may be confused with cases of acute idiopathic pyelitis of pregnancy, or with the symptoms of torsion of the pedicle of an ovarian cyst. Palliative treatment is the best in the milder cases, while in the severer an operation is desirable at once, as in the non-pregnant state. The choice of incision lies between that of McBurney and that of Deaver, at the outer border of the right rectus muscle. Either of these incisions secures a firm abdominal scar. The anatomical landmarks are often much altered; the appendix may be higher than usual or else bound

down and posterior to the uterus. Extreme gentleness of manipulation is requisite, since from the severity of the inflammation or from rough handling the patient may abort or go into premature labour. If uterine contractions begin soon after the operation, adhesions that are forming are almost invariably torn asunder, and the infection may rapidly become generalized. The author gives his notes upon five such cases, in which operation was undertaken and a gangrenous appendix removed; two of the patients aborted, and three died of general septic infection. These cases were not brought for treatment until peritonitis was severe and the general infection well marked. If the operation is an early one, and if it is conducted with care, and particularly if the inflammation is not too extensive, the patient may proceed to term. Induction of labour is not justifiable, since pregnancy may not be interrupted; and the induction itself in the presence of a severe process may add much to the gravity of the condition.

GYNAECOLOGY.

296. Appendicitis and Disease of the Female Genital Organs.

PAUL PROFANTER (*Wien. klin. Woch.*, No. 11, 1909) calls attention to a report, presented to the Berlin Medical Association, on 400 cases operated on for appendicitis, of which between 9 and 10 per cent. had proved to be suffering from some complaint other than appendicitis. Such a report emphasizes both the difficulty of and the necessity for a right diagnosis. Profanter gives a list of the many conditions which may be mistaken for appendicitis, but deals especially with pseudo-appendicitis nervosa and with diseases of the adnexa. In pseudo-appendicitis there is great tenderness at or near McBurney's spot, and it is this tenderness which is liable to cause errors of diagnosis. Tretzel has pointed out that the tenderness in pseudo-appendicitis differs from that in all other affections of abdominal organs in which the peritoneum is implicated, in that it tends to grow less and often disappears shortly after gradual, deep, strong pressure, instead of increasing in intensity. Profanter quotes Lanz, Keith, and Obraztow in support of his view that pain at or about McBurney's spot is present not only in appendicitis but also in inflammatory affections of other organs in the abdominal cavity if the inflammation has affected the sensitive parietal peritoneum. He deals with the extent to which the sympathetic system is involved in inflammatory disease of abdominal organs, in order to explain the pains felt in other and distant parts of the body and the pain which in appendicitis or in disease of the adnexa or other abdominal organs may be felt on the sound side when it is absent on the diseased side, perhaps because the sympathetic nerve plexus is anaesthetized by the pressure of inflammatory oedematous swelling. The diagnosis between appendicitis and disease of the adnexa may be a matter of enormous difficulty. In a large proportion of all women during the period of full sex activity—a proportion which Profanter would put as high as one-half—the appendix has sunk in the abdomen so as to become for practical purposes a pelvic organ, while in a few cases the tubes rise so high as to be near to a normally situated appendix. In such cases the diagnosis will present especial difficulties, and also infectious disease of the appendix is likely to spread to the adnexa and vice versa. With normally situated organs a possible direct peritoneal connexion between the appendix and the right ovary by means of the so-called ligamentum appendiculo-ovaricum and the connexion by means of the retroperitoneal connective tissue have to be considered. The intimate connexion between the appendix and the female genital organs explains the especial liability of women to an attack of appendicitis at the time of menstruation. Different methods of physical examination are suggested as helpful in establishing a diagnosis of appendicitis. Rovsing finds that strong pressure of the descending colon inwards and upwards in the left iliac fossa will elicit, in appendicitis, the characteristic pain at McBurney's point. Plönies, in palpating the abdomen, employs finger percussion as a means of overcoming the muscular tension of the abdominal wall. Bimanual examination is the most important method of distinguishing between disease of the appendix and the adnexa, and Profanter advocates that the examination should be made while the patient is in a bath, in order that advantage may be taken of the effect of the water removing intra-abdominal pressure and the tension of the muscular wall, and the patient is able to help the diagnosis in a way impossible when an anaesthetic is given by recognizing the points of greatest tenderness. According to Berthomieu it is important to recognize that in chronic appendicitis, but not in diseases of the tubes, the pain of palaption in the ileo-caecal region may be greater when the patient is on her left side than when she is in the customary dorsal position. Cases of so-called menstruation colic in virgins may be due to latent appendicitis, and both the history and the bimanual examination may be deceptive, because a congested, and, at that particular time, tender ovary, may be held to be the cause of the pain. In bimanual examination in disease of the right tube the pressure of the finger upon the uterus is painful, and the right wall of the vagina is painful and rigid—conditions which are not found in appendicitis. In general, appendicitis is more acute in its onset, the general condition is more profoundly affected, and the typical facies peritonealis more often seen. In pregnant women, where the diagnosis may be unusually difficult, the appearance of vomiting accompanied by fever would be in favour of appendicitis. In rupture of a tubal pregnancy there is the history, the increase in size of the uterus, and until the blood clots, the shifting dullness, and also the evident signs of collapse. Shortly put, the three chief points in the differential diagnosis between appendicitis and disease of the adnexa of the right side are, the anamnesis, the general condition, and the bimanual examination.

THERAPEUTICS.

297. Magnesium Sulphate in the Treatment of Tetanus.

MILLER (*Amer. Journ. of Med. Sciences*, December, 1908), from a summary of the 13 previously reported cases of tetanus treated with magnesium sulphate injections (10 subarachnoid, 3 subcutaneous), points out the value of this method of treatment, and reports a case of a boy, aged 7 years, in whom eleven lumbar punctures were made in thirteen days, approximately 2.5 c.cm. of a 25 per cent. solution of magnesium sulphate being injected into the meninges at each puncture. Extensive paralysis, lasting from eighteen to twenty-nine hours and involving all muscles except those of the head, neck, and diaphragm, followed each injection. From being in violent spasm and continuous opisthotonos, the patient was reduced in a few minutes to complete and lasting relaxation by an intraspinal injection of magnesium sulphate, and this result, as compared with the treatment by sedatives, was obtained much more promptly and efficaciously. The chief danger lies in the directly depressing effect such injections may produce upon the respiratory centre, an effect produced in this case after the third injection, but, in spite of this, the pulse remained good, and, as a precaution, the head was elevated after the third and during subsequent injections in order to prevent the injected fluid reaching directly to the respiratory centre. A profuse secretion of mucus, sufficient to embarrass respiration, frequently followed the injection, but this was easily controlled by atropine. After each injection, paralysis of the legs, abdominal walls, and sometimes the arms, appeared within thirty to sixty minutes, the muscles of the face remaining unaffected. It was necessary to catheterize the patient for retention of urine from the fourth to the eleventh injection, but the bowels moved involuntarily throughout, though no purgative effect was noted from the absorption of the magnesium sulphate. From the experience of this case and from a summary of the 13 previously reported cases it would appear that by this method it is possible to produce complete muscular relaxation in almost all cases of tetanus, thereby benefitting the patient by preventing the rapid exhaustion due to the convulsions and making the administration of nourishment possible.

298. The New Arsenic Compounds and their Action on Trypanosomes.

THE researches of Ehrlich have led to the preparation and employment of a number of arsenic compounds in the treatment of trypanosomiasis in rats. Starting from atoxyl, Ehrlich has succeeded in producing a large number of its derivatives, and some of these are said to be as active as atoxyl and less toxic. H. Wendelstadt has been enabled to experiment with some of these preparations, and records the results in the *Berl. klin. Woch.* of December 21st, 1908. These include (1) para-oxy-benzylidin arsanilic acid, (2) tri-oxy-benzylidin arsanilic acid, (3) arsacetin (acetylized arsanilate of sodium), (4) arsenophenyl glycin, which had been prepared in flasks, and

which had partially undergone dissociation and partially oxidized into arsenic oxide phenyl glycin, as well as (5) pure arseno-phenyl glycin prepared *in vacuo*. (In the following abstract the various preparations will be called by the number to obviate the repetitions of the long chemical names.) It was found that 0.075 to 0.09 gram per 100 gram body weight was required to protect rats infected with nagana trypanosomes for a time. Recurrences were noted, and the reinjection of the preparation succeeded in protecting the animals for increasingly short periods, until at last even large doses proved inactive. When 0.015 to 0.01 gram per 100 gram body weight of the preparation No. 2 was employed, the blood of the rats was kept free from trypanosomes for a few days, while smaller doses only lengthened life without killing off the protozoa. Rats infected with nagana trypanosomes were permanently cured by injections of 0.03 to 0.09 gram of No. 3 per 100 gram body weight. When infected with "arsanil-fast" trypanosomes, this preparation proved inactive. The cured animals exhibited marked tremors for some time after recovery. No. 4 preparation proved to be unstable. When quite fresh, 0.005 to 0.01 gram per 100 gram body weight cured permanently, while after two months 0.005 to 0.009 gram killed the rats in from two to four days. The older preparation, however, achieved permanent recovery in doses of 0.003 to 0.004, which doses were insufficient when fresh preparation was used. Number 5 preparation—that is, the vacuum preparation—proved to be stable; 0.008 to 0.025 gram sufficed to cure permanently, while 0.005 to 0.007 gram only turned the trypanosomes for a week. A monkey which had been infected with nagana trypanosomes, and whose blood showed numerous protozoa, was cured by two injections of 0.0025 gram. No recurrence has taken place up to the present. No. 4 preparation revealed a great disadvantage in that, on dissociating and oxidizing, the products became highly toxic, and blindness, among other symptoms, was produced by therapeutic doses of the compound. No such unwished-for effects were seen in the vacuum preparation, which appears, therefore, to be an almost ideal medicament in nagana trypanosomiasis in animals.

299. Rectal Injections of Red Wine for Infantile Diarrhoea.

HOUSSAY (*Rev. Franç. de Méd. et de Chir.*, January 25th, 1909) speaks highly of the procedure of washing out the lower bowel with warm wine in severe cases of infantile diarrhoea. Realizing that the ordinary red wine of France is a natural and physiological antiseptic, being a tannic and alcoholic solution, he has employed it in summer diarrhoea for some time, and he recalls to mind the fact that it was used as long ago as 1880 in Cochin China. He injects one litre on the first day, and afterwards two litres daily until the stools become normal. A double cannula facilitates the operation, and it must be understood that it is a washing out that is required and not an enema. Old wine, rich in alcohol, is not suitable for the purpose.

PATHOLOGY.

300. Latent Microbism of Typhoid Bacilli.

BY latent microbism H. Lüdke (*Muench. med. Woch.*, January 12th, 1909) means the vegetation of living or viable germs in the animal organism, without any manifestation of the clinical illness which is pathogenically produced by the bacteria in question. During the last few years support has been forthcoming for the theory, and has taken the form of the discovery of healthy bacillus carriers in whose gall bladders and intestines typhoid bacilli can be found. Similarly, persons are met with in whose fauces pathogenic diphtheria bacilli, streptococci, and pneumococci are found, in spite of the fact that the individuals remain quite well. Meningococci have also been found in the naso-pharynx of healthy persons. There is no doubt that, at all events, the bacilli gained from typhoid carriers and diphtheria carriers are virulent to other persons or animals. The author next adduces evidence that various pathogenic bacteria may be present in apparently healthy normal tissues. In order to understand the process better, he considers it necessary to consider the life of latent germs in the circulating blood. In animals the cholera vibrio disappear out of the blood after from twenty to forty minutes; *B. pyocyaneus* disappear after six hours and *B. typhosus* after about twenty-four hours. Pneumococci have been demonstrated in the blood of infected animals for weeks. Bruce found *Trypanosoma gambiense* in the blood of 23 out of 29 perfectly healthy negroes. In order to determine the latency of typhoid bacilli in the circulating blood, Lüdke has performed a series of experiments which show that six days after intravenous injection no typhoid bacilli can be cultured from the blood, when one-tenth of a loopful of culture was introduced. After the injection of one-fifth of a loopful, bacilli were still found on the sixth day, while, after half or a whole loopful, bacilli were found on the eighth day. He points out that in order to determine the presence of bacilli, it is necessary to use comparatively large quantities of blood. In human subjects, typhoid bacilli were found in the blood of 95 per cent. during the first week, in the blood of 50 per cent. during the second week, in the blood of 18 per cent. during the third week, and in the blood of 10 per cent. during the fourth week. In recurrences, the bacilli which have been lying dormant in organ dépôts again appear in the blood. He next shows, on the strength of two cases, that typhoid bacilli can be present in the blood of patients after the fever has disappeared. Investigating the latency of the bacilli in the organs in animals, he found that the spleen and bone marrow contain bacilli for about two weeks after intravenous injection of one-tenth of a loopful of culture. He adduces evidence in favour of the bacilli being carried to the organs by the blood. It is extremely difficult to determine whether typhoid bacilli increase in the organs. Certain changes in the bacilli can be shown to take place in the organs. Bacilli which have been cultured from the organs show increased resistance toward the various forms of serum activity. For example, a strain was obtained from a typhoid carrier, which was proved by agglutination, by the capability of producing a bactericidal immune serum in guinea-pigs, by the fact that immunized guinea-pigs were immune to this strain, and by all the cultural characteristics, to be true typhoid bacilli. These bacilli were not affected by Pfeiffer's test in a concentration of over 1 in 20. The loss of reaction toward the lytic serum might have caused some doubt as to the nature of the bacilli had the other investigations not been carried out. Next he cites examples of the persistence of bacilli in an organism in which a high degree of protective power was found. The agglutinating value of the serum may rise as the bacilli disappear out of the serum. Cases are given in support of this. Lastly, he finds experimentally that a long latency of typhoid bacilli in the organ produces a loss of virulence, while a passing over to the blood takes place concurrently with an increase of virulence.

301. Gall Stones and their Cholesterin Constituents.

ADAMI (*Western Canada Medical Journal*, January, 1909) publishes the results of some recent investigations upon the composition of gall stones, especially with reference to the cholesterin constituent—how it comes to appear in the bile, how it is liberated, and what are the factors leading to the formation of calculi. Cholesterin is either excreted and is present in normal bile as a chemical compound soluble in the bile and subsequently undergoing dissociation with liberation and precipitation of the crystalline cholesterin moiety, or it passes through the cells in a state of solution and becomes precipitated later owing to altered conditions in the bile. The stagnating bile in the gall bladder contains a much larger amount of unprecipitated cholesterin than does fistula bile, and it is there associated with fats, soaps, and lipoid substances, lecithin, etc.—gall bladder bile containing five times as much fats, and thirteen times as much soaps as that flowing freely from a biliary fistula. In the blood cholesterin is present in the form of cholesteryl esters, and the only known bodies which assume the fluid crystalline state at the room temperature are sundry oleic acid compounds. It would appear that the myelin globules in the gall bladder epithelium and Naunyn's amorphous cholesterin are essentially cholesteryl oleate which normally passes in solution into the bile, but which, under certain conditions in the gall bladder, is liberated in a solid state, tending to collect into clumps, while under other conditions precipitation of crystalline cholesterin occurs. With dissociation of the cells the myelin cholesteryl oleate is liberated, which under the action of pure alkalis in the bile becomes dissociated and the cholesterin precipitated, the fatty acid being converted into soaps which tend to become absorbed. It is concluded that cholesterin is capable of existing in the organism in definite combination with fatty acid and lipoid substances, and that in the form of this easily soluble compound it is excreted into the bile, where it may become dissociated, either undergoing solution in the presence of fats, soaps, etc., or, where such solvents are inadequate, undergoing precipitation, and so becoming portions of gall stones.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

302. Estimation of the Functional Activity of the Pancreas.

H. SCHLECHT (*Zentralbl. f. inn. Med.*, February 6th, 1909) has devised a method of testing the functional activity of the pancreas which is based on that of Müller and Jochmann for the detection of proteolytic ferments. Experiments with Löffler's serum showed that the proteolytic ferment contained in faeces is trypsin. The presence of pepsine and the proteolytic ferment of leucocytes was excluded. That the ferment could be derived from intestinal bacteria was rendered improbable by the quantity of ferment being least in those parts of the intestine in which bacterial decomposition was most active. Finally, the faeces of a dog were found to contain no ferment twenty-four hours after an operation had been performed to prevent the entrance of pancreatic juice into the intestine. To estimate the functional activity of the pancreas the following procedure is employed: The lower bowel is cleared out by a large enema or injection of glycerine early in the morning. A test meal is then given consisting of 150 grams of meat and 150 grams of mashed potatoes ("Kartoffelbrei"). An hour later a brisk purge is administered, such as 0.2 gram (3 grains) of calomel, or 0.5 gram (7½ grains) of purgen, or 0.2 gram of calomel with 0.3 gram of purgen. Two or three watery stools usually occur two or three hours later. To determine whether the faeces contain trypsin, a few drops of the faeces are placed with a platinum loop on a plate of Löffler's serum, which remains in the incubator at 50° or 60° C. for twenty-four hours. If the faeces contain trypsin a depression forms under each drop. This becomes apparent if much ferment is present after about thirty minutes. If no depression is formed within twenty-four hours trypsin is certainly absent. If the faeces are pultaceous they should be rubbed up with 10 grams of glycerine and 100 c.cm. of water before being "sown" on the plate. As trypsin is most active in an alkaline medium, it is important to test the reaction of the faeces and, if necessary, to render them alkaline with a weak solution of caustic soda. If much fat is present it should be removed by agitation with ether. If the stools are diluted in a graduated pipette the method may be used for approximate quantitative estimations. If the test is positive—that is, if a depression forms on the Löffler plate—the pancreatic duct is certainly patent, but an organic disease of the pancreas is not excluded, with the possible exception of an extreme result as regards digestion of the plate. Great diminution of the normal digestive action of the faeces suggests pancreatic disease. But within fairly wide limits diminution merely indicates diminution of pancreatic secretion, such as is common in carcinoma of the stomach, gall stones, catarrhal jaundice, and chronic constipation. If the result is negative, obstruction of the pancreatic duct or a severe lesion of the pancreas may safely be diagnosed. The test is also useful in cases in which pancreatic disease is clinically obvious, to ascertain to what extent the pancreatic function has suffered. It is of interest that in normal persons the tryptic activity of the faeces was uninfluenced by diet or diminution of the acidity of the gastric juice by administration of large doses of bicarbonate of sodium. In the few cases of diabetes mellitus examined the results were inconclusive: in some the tryptic action was very slight, and in others (the minority) almost normal. The writer has recently modified the method to avoid the trouble of preparing Löffler plates. Capsules of hardened gelatine, similar to Sahli's glutoid capsules, are filled with powdered wood charcoal. One of these is added to a tubeful of diluted faeces, which is then placed in the incubator at 37° C. If trypsin is present the capsule is digested and the faeces become coloured black in from thirty minutes to twenty hours. If the capsule has not dissolved within twenty-four hours trypsin is absent.

303. Late Rickets.

PALAGI (*Archiv. di Ortoped.*, An. 26, f. 1, 1909) gives the results of a study of 28 cases of this condition seen by him at the Hospital for Rickets in Milan, and on the recorded cases of others. Heredity does not seem to play an important part in the etiology of the disease; for example, of the authors 28 cases only 3 had brothers who suffered from rickets in early infancy and 5 had a doubtful history of rickets in collateral relations. An acute illness will sometimes be followed by late rickets (the author quotes 2 cases). The chief exciting cause, however, seems to be more or less laborious work at the time of early puberty. The usual age of onset is between 12 and 15 years, and 17 out of the 28 cases were females. The first symptom is pain, usually in the lower limbs, especially the knee. It is generally the joints, or their neighbourhood, that are affected, the shaft of the bone not being painful. The pain is not very severe and is in relation to the work imposed on the limbs, hence repose usually relieves it. Shortly after the pains come on, there appear the epiphysial enlargements. There is nothing particularly noteworthy in the general condition of these patients. The muscular hypertonus and increased tendon reflexes cannot be relied on as a differential mark between the disease in question and osteomalacia. There are no visceral changes. The gait is characteristically altered. Some confusion may arise between an unusually prolonged case of infantile rickets, a syphilitic epiphysitis, and juvenile osteomalacia; in all these cases much help can be derived from radiography, and the author goes very carefully into the radiographic appearances best seen in the knee. The course of the disease is slow and the prognosis generally favourable. In treatment the best results are obtained by phosphorus dissolved in cod-liver oil. The deformities may need operative treatment. Genu valgum may in some cases be a local result of late rickets which is itself a general disease. Probably juvenile osteomalacia is so closely akin to late rickets that the two are almost identical, and the author quotes a case strongly in support of this. Details of 30 cases are given and a bibliography of 88 references.

SURGERY.

304. Post-operative Pulmonary Embolism.

LENORMANT (*Arch. Gén. de Chir.*, No. 3, 1909) bases on four records of the occurrence in his surgical practice of pulmonary embolism after operative intervention a full and instructive discussion of this complication, which he states is by no means an exceptional event. These four instances were observed in a series of 792 diverse operations, and in statistics of von Eiselsberg's clinic pulmonary embolism is noted to have occurred in 57 out of 6,800 operations. This low proportion may, however, be much increased by taking into consideration only those operations that have been practised on the contents of the pelvis and the lower region of the abdominal cavity. Post-operative pulmonary embolism, it has been shown, occurs in a very large majority of instances in connexion with surgical intervention for appendicitis, for diseases of the female genital organs, and for the relief of strangulation or for radical cure in cases of hernia. The original thrombus constituting the starting point of the post-operative embolism has on *post-mortem* examination been found in some cases at the seat of the operation, in other cases at some distance from this in the femoral and iliac veins, which in 90 per cent. of instances, and even after operations on the appendix and right inguinal hernia, are exclusively those on the left side. In the first class of cases the formation of the thrombus may, it is stated, be readily explained by surgical traumatism or by local infection. Many suggestions, such, for instance, as disturbances of the circulation and alterations of the blood, cardiac lesions produced by chloroform, and the abnormal conditions imposed on the patient during the after-treatment, have been made to account for the development of a distant thrombus, but each of the suggested factors, the author holds, is quite incapable by itself of causing the complication. Thrombosis, he believes, is always caused by phlebitis, and support is given to the view held by many German surgeons that post-operative thrombosis and embolism are septic lesions. The infection may be so slight as to be clinically inappreciable, but still, the author asserts, it exists. It is difficult to account for the migration of the whole or a portion of the clot to the heart and lungs in those cases in which post-operative embolism has its origin in an organ—the

intestine, omentum, or appendix, for instance—the veins of which belong to the portal system. The author holds that it is necessary to assume in such instances the extension of the thrombosis to the porto-caval anastomoses formed by the retroperitoneal veins, and also, in cases of appendicitis, the existence in adhesions of new-formed vessels establishing a communication between the appendicular veins and the veins of the abdominal wall. The pulmonary lesions vary in character and intensity in accordance with the size of the embolic clot. Large emboli arrested in the trunk or primary divisions cause speedy death by syncope, whilst minute emboli are carried into the lung, in most cases into the lower lobe of the right organ, and there set up haemorrhage, infarction, or, in cases of well-marked infection, suppuration or gangrene. The relative frequency of these different lesions is indicated by the statistics of Ranzi, who found that of 57 cases of post-operative embolism, 23 were rapidly fatal; that in 20 there were symptoms of pulmonary infarction, and in the remaining 14 symptoms of embolic abscesses. Post-operative embolism is sometimes preceded by evident signs of thrombosis of the veins of the lower limb, but in most cases, especially in those in which the deep-seated veins of the abdomen and pelvis are affected, the first symptoms occur in the chest. The length of the interval between the operation and the embolic attack varies very much in different cases. One instance has been recorded of sudden death within the first twenty-four hours, and in others the complication was delayed for three months. The author states that the first signs of the attack usually occur from the tenth to the twelfth day after the operation. The symptoms of post-operative distinguished from other forms of embolism present no special characters. The attack may cause sudden or speedy death from syncope or asphyxia, or it may be almost latent and result only in slight pain and scanty expectoration. The prognosis, it is pointed out, is extremely grave. Many of those who are not carried off suddenly succumb sooner or later to infective lesions such as pneumonia, abscess, and gangrene. Statistics of 233 collected cases show a death-rate of 45.5 per cent., but this, it is suspected, fails to express the absolute mortality of post-operative embolism. In discussing the preventive treatment of this complication, Lenormant insists on the importance of careful preparation of the patient before any serious operation, of strict attention to aseptic details, and gentle dealing with large veins during the intervention, and of prolonged and complete rest during the after-treatment. He directs special attention to this last condition, and strongly opposes the views of those who have recently advocated a very early release from bed after laparotomy. Very little, he holds, can be done by the surgeon after the development of thrombosis and embolism. A proposed attempt to prevent embolism in cases of thrombosis of the femoral vein by proximal ligature is regarded as useless, as the thrombosis in such cases has usually involved the deep pelvic veins. This paper ends with a review of the methods of treating those severe forms of pulmonary embolism in which immediate death is feared, by direct massage of the heart and by direct removal of the large clot after exposure and incision of the pulmonary artery. The latter method, proposed and practised by Trendelenburg, has hitherto failed, but Lenormant thinks that the records of this very formidable and difficult operation justify some hope, and should encourage surgeons to make fresh endeavours.

305. Operative Treatment of Carcinoma of Penis.

NICOLL (*Ann. Surg.*, February, 1909) describes an operation for the removal of penile cancer which he has practised during the past fourteen years. The object of this method is the removal *en masse* of the primary carcinoma, the fat and glands of the groins, and the lymphatic vessels intervening between the primary growth and the area of actual or probable secondary extension. It is pointed out that epithelioma of the penis primarily extends along the dorsal lymphatic channels on either side of the blood vessels, and affects the superficial and deep inguinal glands above the brim of the pelvis. The author holds that only late in the progress of the disease does the growth infiltrate the corpora cavernosa and thus reach the lymphatics under the pubic arch, and, through these, the intrapelvic glands. When such infiltration of the proximal portion of the penis and invasion of the intrapelvic glands have occurred, the case in a vast majority of instances may, it is stated, be regarded as inoperable. The operation of bisecting the scrotum and removing the whole penis together with the crura may, it is stated, be possibly justifiable in only a few cases. The author's method, which is adapted to the usual operable case in which the anterior fourth or third of the penis is involved, with possible extension of the disease along the dorsal lymphatics to the inguinal glands, is carried out through a Y-shaped incision, each arm of which extends from the root of the penis towards the superior iliac spine, the leg being carried along the dorsum of the diseased organ, and terminated in a loop around this organ in front of its proximal fourth. The fat and all lymphatics and glands are dissected out *en masse* from both groins. In cases in which this step is indicated, the fascia just below Poupart's ligament is opened, and after exposure of the femoral sheath and repression of the peritoneum, the fat and glands along the external iliac vessels are excised. In the next stage the dorsal blood vessels and lymphatics of the penis, together with all investing fascia, are dissected out. The dorsal arteries and veins are tied close to the pubes at the suspensory ligament. The fat of the groins and the fascia and vessels of the dorsum of the penis form one continuous mass containing the unbroken lymphatic channels. The corpus spongiosum and corpora cavernosa are now cut through, the first, together with the divided urethra, being left rather longer than the latter bodies. Drainage of the wounds in the groins is necessary as removal of the fat and glands of this region is followed by lymphorrhoea, a result, the author states, that is unknown in the axilla after excision of mammary cancer.

OBSTETRICS.

306. Indications and Technique of Forceps Delivery.

H. SELLHEIM (*Deut. med. Woch.*, April 1st, 1909) attempts to set up definite indications for the application of forceps to terminate labour. In cases of uterine inertia, he considers that forceps may be used if the reaction on the part of the mother, properly and repeatedly applied, is absent. Hot "sitz" baths or full baths are used for this purpose, and if, after several hours, no responding pains set in, if the local condition reveals that the birth will not be completed for a long time and the uterus does not appear inclined to assist itself further, he believes that it is a mistake to wait longer. He speaks strongly against the application of the forceps to please the patient. The mechanism of birth when completed by forceps is identical with that when Nature completes it herself, and, when properly applied, the traction on the forceps can replace in every sense the expelling power of pains. Traction must be made in the proper direction, but the handles of the forceps show which this direction is. Nature assists even when forceps are applied, and the obstetrician must take his hints from her. In the same way, rotation takes place automatically when forceps are being used, provided that the traction is applied in a skilful manner, in which the automatic following of the curves of the pelvis is permitted by the steering hand and not acted against. It may be necessary, however, to rotate artificially in certain cases. At times, when the fetal head does not rotate when it should, the blade of the forceps should be used to carry out the rotation, but it must always be borne in mind that under abnormal anatomical conditions, an abnormal mechanism may be required, and that unusual methods of completing labour may be the best. Before applying forceps both rectum and bladder should be emptied. In easy cases the patient is placed transversely across the bed, but in cases in which difficulties are anticipated she should be placed on a suitable table. The preparation of the operator, instruments, and patient must be the same as is required for any modern instrumental intervention. The legs may be held by the most promising looking person to be found in the house. Anaesthesia is desirable and should be deep to protect the perineum from rupture. No anaesthesia is better than bad or superficial anaesthesia. Before the forceps are applied the parts should be again examined. The blades of the forceps should be applied by adapting them to the head. The directing finger should precede the tip of the blade in order to ensure that the maternal soft parts are not included, whenever this is possible. All folds of skin and hairs must be carefully pushed aside before the blades are locked. Trial traction is necessary to satisfy that the forceps are properly applied to the fetal head. The extraction should be conducted in a manner calculated to imitate the natural mechanism of labour. The progress must be continuously controlled by the examining finger. In occipito-anterior presentations the most favourable conditions are met with, but no difficulty should be experienced when the forehead or face enters the pelvis in the corresponding manner. When the occiput, forehead, face, or coronary suture presents in an oblique position, the forceps may be applied either in the adaption optimum for the head or in the adaption optimum

for the pelvic canal. It is generally wiser to choose the adaption optimum for the head, and to accept the slight difficulty arising from the canal. The head having been properly secured, less damage is likely to ensue to the pelvis than would ensue to the head if the canal were the first consideration. When the head presenting by the occipito-posterior refuses to obey the usual mechanism of these presentations, or when trial traction tends to rotate the posterior fontanelle backwards, an attempt should be made to convert the presentation into an occipito-anterior. The forceps with the concavity corresponding to the pelvic curve turning to the forehead, are applied to the head in that diameter oblique of the pelvis in which the sagittal suture is not placed, and attempts are made to push the forehead to one side. The finger must govern each movement. As soon as the sagittal suture lies in the transverse diameter, the forceps are taken off and reapplied in the reverse direction. The occiput is then directed forwards and the forehead backwards. A similar scheme is followed in face presentations with the chin pointing backwards. Next the author speaks of the high forceps operation. He mentions that this operation is only permissible as an experiment, and it must always be recognized that the usual conditions for a forceps operation are not fulfilled—namely, that the head should be completely in the pelvis. Under any circumstances the high operation may only be attempted by an experienced hand. The head must be easily grasped by the forceps, and may not slip off at the trail traction. In presentations with the temporal bone looking backwards, in high forehead or face presentations, and when the anterior fontanelle is lying low down, the forceps always slip off. It must further be remembered that this operation cannot save a child which is showing signs of dying. The last word of warning is that if the attempt is made and fails, only perforation remains to help the mother. The blades should be applied in the transverse pelvic diameter. The finger should attempt to guide them as far as possible, but it is always possible that the points of the blades may compress the cord which lies around the neck. Before closing he warns the practitioner not to apply force when skill suffices.

GYNAECOLOGY.

307. Vermiform Appendix adherent to Fibroid with Twisted Pedicle: Appendicitis Simulated.

PILLET (*Annales de Gyn. et d'Obstét.*, April, 1909) reports that a single woman, aged 35, was seized in the night with a sharp attack of pain in the hypogastrium and right iliac fossa and vomiting of food, mucus, and at length bile. On the next day there was marked muscular resistance over the iliac fossa, the features were drawn, the pulse 120, but the temperature low. A few days later Pillet examined the patient; the muscular resistance then extended all over the abdomen. He diagnosed appendicitis, yet believed axial rotation of an ovarian cyst to be possible; but there was no history of any other symptom of any kind associated with ovarian new growths. At the end of a month the period set in and lasted for three days without pain. A mass as big as an orange could be defined, through the rectum, lying to the right of the uterus and continuous with deposit filling the corresponding iliac fossa. Four weeks later, as there was no diminution of the swelling and exudation, Pillet operated through a lateral incision. He found that the mass of the size of an orange was a necrotic fibroid, to which two-thirds of the vermiform appendix adhered. There were other adhesions; on separating them the bladder was damaged, but repaired at once. The uterus was amputated above the cervix and the appendix excised. There were no complications during convalescence. A considerable number of cases of axial rotation of pedunculated uterine fibro-myomata have been recently published, but Pillet dwells on the adhesions to the bladder and vermiform appendix as of special surgical and clinical interest in his own case.

308. Hairpin in the Bladder.

GUILLET (*Rev. Franç. de Méd. et de Chir.*, January 25th, 1909) describes a successful operation which he undertook for the removal of a hairpin from the bladder in the case of a girl of 16. The pin had been introduced two days before, and an unsuccessful attempt to remove it had been made by the family doctor. Pain in the lower part of the abdomen was complained of. Vaginal examination revealed nothing, but a metallic sound in the bladder caused a flow of slightly blood-stained urine, and gave indication of the presence of a foreign body. Under chloroform the situation of the pin—near the neck of the bladder—having been again made out, the cavity was distended with boric solution, and the urethra gradually dilated by means of Hegar's bougies, up to No. 13. The little finger of the right hand was then introduced into the bladder carefully and gradually, but without any difficulty. The distension of the bladder had moved the pin from its former position near the neck, but the left forefinger in the vagina soon enabled the surgeon to get the other finger in contact with it, to turn it lengthways with its closed end next the urethra, and finally to extract it safely, after some little delay. The operation was concluded by washing out vagina and bladder, hardly any bleeding having occurred. The urethral dilatation caused no incontinence, but, on the contrary, two days' retention, which passed off without special treatment, and the patient left the hospital on the fifth day.

THERAPEUTICS.

309. The Behaviour of Atoxyl in the Body.

IGERSHEIMER AND ROTHMANN (*Hoppe-Seyler's Zeitschr. f. phys. Chemie*, vol. lix, p. 256) have investigated the fate of atoxyl in the organism, not only because of its value in trypanosomiasis but also to elucidate the selective action of atoxyl on the eye, its specific action on the central nervous system of the cat, and the nephritic haemorrhages to which it gives rise in the dog, and which are seldom if ever observed in poisoning by inorganic forms of arsenic. The greater part of the atoxyl given in one dose is, according to Croner and Seligmann, eliminated in four to eight hours, but continues for some twenty-two hours in small traces in the urine. Blumenthal and Kegel obtained similar results. The authors estimate the atoxyl in the urine by a colorimetric method, which depends on the formation of an azo-dye when atoxyl (or urine containing atoxyl) is treated with α-naphthol in the presence of sodium nitrite. The colorimeter is described by Gottlieb and Stangassinger in vol. lii of the *Zeitschr. für physiol. Chemie*, and the method gives very accurate results when tested with known quantities of atoxyl dissolved in urine or water. The total quantity of arsenic in the urine and faeces was also determined by Dragendorff's method. The experiments were carried out on rabbits, cats, dogs, and man, the atoxyl being injected. Elimination was completed in five or six hours (for rabbits) and in nine hours (for men), and in one case 96 per cent. of the atoxyl was recovered from the urine of a rabbit. As the total arsenic recovered was generally greater than the atoxyl recovered, some chemical change must have taken place to a small extent. No toxic symptoms were observed, unless there was evidence from the analyses of retention in the body. Ehrlich suggested that the therapeutic action of atoxyl depends on its reduction in the organism to p-amidophenylarsinoxide; for atoxyl is not fatal to trypanosomes *in vitro*. Igersheimer and Rothmann find that this substance is not eliminated in the urine of rabbits after subcutaneous injection, so that if atoxyl were converted into it in the body, there would not have been any azo-dye produced in the urine of the experimental animals. (The two substances—atoxyl and p-amidophenylarsinoxide—produce apparently similar azo-dyes.) Moreover, the urine of the experimental animals was not more toxic than atoxyl when injected into rabbits, whereas the reduction product is extremely fatal to rabbits; therefore, they say there was, if any, only a negligible amount of the reduced body in the urine, and the substance eliminated was actually atoxyl. This conclusion harmonizes with Heffter's observation, that after injecting sodium cacodylate, it is eliminated as such and not as cacodyl. The blood of rabbits was examined after intravenous injection of atoxyl, and it was found to be present almost exclusively in the blood serum, and only in very minute traces in the corpuscles. After two hours and a half, even with saline perfusion, only very small quantities were found in the blood serum, but there was more arsenic than could be accounted for by the quantity of atoxyl present. In one of the experiments 500 mg. of atoxyl were injected intravenously into a rabbit. It was bled to death five minutes afterwards. The urine contained 8.33 mg. and the kidneys 33.74 mg. of atoxyl, and linear haemorrhages were seen in the kidneys. Inorganic arsenates take only a few minutes to disappear from the blood after intravenous injection, or, at any rate, are only present in traces (Morishima). The more protracted sojourn of atoxyl in the serum may have some bearing on the therapeutic value of atoxyl in diseases caused by haematozoa. On the other hand, the fact that atoxyl can only be demonstrated in traces in the blood corpuscles accounts for the resistance which the malaria parasite exhibits towards atoxyl. In

the rabbit and the dog considerable quantities of the atoxyl were found in the internal organs and also in the central nervous system of the cat. Traces were found in the eye of the cat and dog, whereas injection of sodium arsenate into a cat in doses corresponding in the amount of arsenic with the quantity of atoxyl used in the previous experiments did not give rise to the least trace of arsenic in the eye. The authors agree that there may be some production of an inorganic combination of arsenic after administration of atoxyl, but only in a relatively non-poisonous form. The large amount of atoxyl in the blood after injection explains the possibility of trypanosomiasis being cured in some cases by means of a single injection. The poisonous symptoms of atoxyl are, in the opinion of the authors, due to reduction products on the one hand and to inorganic arsenic on the other, for the late symptoms of atoxyl poisoning are the same as those of arsenical poisoning—namely, conjunctivitis, rhinitis, pharyngitis, trophic skin changes—but these never occur in acute and subacute atoxyl poisoning.

310. Roentgen Rays in Malignant Disease.

PFAHLER (*Amer. Journ. of Med. Sciences*, April, 1909) discusses the value of Roentgen-ray treatment in cases of deep-seated malignant disease in contradistinction to the epitheliomata and superficial carcinomata. Personal observations were made in the treatment of 35 sarcomata and 304 deep-seated carcinomata involving the subcutaneous, glandular, visceral, or osseous tissues; and most of the cases were recurrent, very advanced, or very malignant, and such as had passed beyond the reach of other methods of treatment. Although the Roentgen rays were used as a last resort and ultimately failed in the majority of cases, some lives were saved, or were much prolonged, while in nearly all there was some temporary benefit. Of the 35 cases of sarcoma 9, still under treatment, have markedly improved, while 65 per cent. of the remainder recovered, with a recurrence in 2. In operable cases the best results will follow operation with a thorough course of Roentgen-ray treatment immediately following. The treatment of carcinoma is not so satisfactory, though improvement was noted, and probably the greatest field of usefulness of the Roentgen rays is supplementary to operation both before and after, and this latter should be commenced within a week, approximately fifteen to twenty treatments being given. Exposures should be from ten to thirty minutes, and when over ten minutes they should be given in more than one direction, though always towards the centre of the growth. The distance of the anode from the skin should be from 10 in. to 15 in., and the deeper the lesion the greater the distance and the longer the exposure. In rapidly-growing sarcomata treatment should be daily, while in carcinomata three times a week may be sufficient, and this may have to be continued from a few months to several years, with varying intervals, depending upon the patient's condition. Localized recurrent carcinoma usually yields to treatment unless the mucous membrane is involved.

311. Action of Thyroid and Thymus Extracts on the Circulation.

CONSIDERABLE obscurity has hitherto attached to the influences exerted by extracts of the thymus and thyroid glands on the blood pressure. Some experimenters have found that they lower the blood pressure, others that they raise it. A. Farini and G. Vidoni (*Lo Sperimentale*, Florence, 1908, lxii, p. 721) find that extracts of the thyroid gland and thyroidine both cause a local vaso-constriction, which is neither preceded nor followed by any vaso-dilatation; they attribute this to a direct action on the involuntary muscle of the vessels. Injected into the veins, however, thyroid extracts cause a notable lowering of the arterial blood-pressure, in some instances preceded by a rise. Hence there is an antagonism between the local or peripheral action of thyroid extract and its central action. The influence of extracts of the thymus is similar to, but less marked than, those of thyroid extracts; here, too, the antagonism between the central action and the peripheral action is to be observed.

PATHOLOGY.

312. The Origin of Anthrax Antibodies.

MAX GRUBER AND K. FUTAKI publish the results of their experiments which deal with the resistance of animals against anthrax and the origin of the antibodies in the organism (*Muench. med. Woch.*, February 5th, 1907). The dog and hen are practically immune toward anthrax. The high temperature of the latter (41° to 42° C.) must be harmful to the micro-organism, but the dog's temperature appears to be beneficial to its growth. Hen's leucocytes and also dog's leucocytes eat up virulent anthrax bacilli readily, while guinea-pig's and rabbit's leucocytes do not exert any phagocytic action on them. They surround the bacilli for a short time and then leave them free. However, rabbit's leucocytes are not harmless to anthrax bacilli; 0.1 c.cm. of leucocytic emulsion was capable of killing 350,000 anthrax bacilli in one hour. This action depends on the giving off of a substance which digests the protoplasm of the bacilli. This action is so strong *in vitro* that one is astonished at first that the animals have so little power of resistance against an invasion of the bacilli. In some experiments with the bactericidal action of rabbit's serum, they found that the bacilli which resisted the action of the serum were possessed of an enormously thick capsule. It proved quite easy to cultivate the bacilli in heated rabbit's or guinea-pig's serum. They found that non-capsuled bacilli, both in animal experiment and also *in vitro*, are readily attacked and surrounded, while capsuled bacilli are not attacked by the leucocytes at all. In order to find an explanation of this fact, they studied the behaviour of the various animals when inoculated in various ways. When applied subcutaneously capsuled bacilli rapidly multiply in rabbits and guinea-pigs, while anthrax bacilli die within a short time in dogs and hens, and very few capsuled bacilli are developed even when large quantities are injected. The bacilli in the last-named case die extracellularly. It thus appeared that the lymph in the subcutaneous tissue would have a specific action, and they next collected this lymph in hens, rabbits, and guinea-pigs by introducing plugs of cotton-wool under the skin. The plugs were taken out after a time, and the fluid either expressed or centrifugalized off. Lymph gained after two hours from guinea-pigs proved inert; two-hour lymph of the rabbit was not quite inert, but in a number of experiments the action on bacilli was very weak. On the other hand, two-hour lymph taken from the hen killed off all the bacilli within one hour in thirteen out of fifteen experiments. It therefore is certain that the bactericidal action in the hen is independent from the blood, since serum is inert toward the bacilli. They attempted next to determine the origin of the bactericidal substance. They were able to show that it does not originate from the subcutaneous tissue itself. Further experiments prove that the substance is derived from the action of the lymph on leucocytes. It seems as if the giving off of this substance is a normal production and not a pathological manifestation. They found that, after the tissue had been rendered oedematous in the rabbit, the oedema fluid attained the same bactericidal capabilities, and this fact is offered as an explanation for the experience that when rabbits are treated by passive hyperaemia according to Bier, they recover from an otherwise lethal dose of anthrax bacilli. Rabbit's leucocytes, however, are much less productive in bactericidal substance than are hen's leucocytes. Lastly, they found that the blood platelets of the rabbit and rat, as against those of the guinea-pig and hen, give off another substance which acts bactericidally toward anthrax bacilli. This last-named substance is given off after the blood has clotted, and in this way lends a bactericidal action to the blood serum of the two animals. It is possible that it may be present in the serum of the circulating blood when the animals are infected, and that through its influence a certain degree of immunity is produced.

313. Histology of Retained Testes.

CONFORTI (*Il Morgagni*, July, 1908) has examined 8 cases of retained testes with especial reference to their histology. In such testes it is common to find groups of tubules or single tubules at an early period of development. These tubules are for the most part grouped in nodes which Pick described as adenomatous neoformations and Lanz called atypical inclusions of seminal epithelium. In the author's view they are, as far as his researches extend, merely groups of tubules at an early or arrested period of development. The spherical and concentric bodies described by Felizet are not (as they thought) endocanalicular and formed by hyaline degeneration of seminal epithelium, but extracanalicular and originating from the basal membrane by a process of degeneration. The interstitial cells vary greatly in quantity in single cases, sometimes they may be very numerous and grouped in large nodules. Their secreting capacity is usually diminished and in proportion to the number of such cells. Their presence is not so much a kind of compensatory hypertrophy as a result of disturbed evolution acting both on the seminal canaliculi and on the interstitial cells.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

314. Habitual Constipation in Infancy as a Cause of Death.

B. GLASERFELD (*Berl. klin. Woch.*, March 22nd, 1909) finds that habitual constipation in infancy is very scantily dealt with in medical literature, although the same condition in adults commands great attention. The condition in infants is extremely common, and frequently is very difficult to treat. It is usually unaccompanied by morbid processes, and rarely leads to a fatal termination. Since the author has been able to observe a case which terminated fatally, he considers that the details are worth publishing as a contribution to the pathology of this condition. The patient was born on June 2nd, 1908, and weighed 3,000 grams. The organs appeared to be healthy. No meconium passed until an enemia was given on the seventh day. It was fed at the mother's breasts but no spontaneous motion was evacuated. In response to water enemata, hard but otherwise normal stools were passed. Abdominal massage was resorted to without appreciable benefit. On October 4th the infant had to be weaned on account of illness of the mother—appendicitis, necessitating an operation—and from that time onward cow's milk, various infant's foods, etc., were given fair trials. In the following nineteen days the infant lost 450 grams, and the constipation remained very obstinate. Glycerine enemata, castor oil, camomile infusion, water salt solution, and other substances as enemata, syrup of rhubarb *inter alia* were used to produce motions. On a few occasions scybala had to be mechanically removed from the rectum. On December 20th no motion could be obtained. Fever appeared on the 22nd. The rectum was empty, flatus passed plentifully, and there was marked tympanites. An operation was decided on, and this was carried out on the 23rd. As soon as the peritoneum was opened faecal-smelling gases escaped, and thin pus was found in the cavity. The appendix was natural, but there was marked injection of the vessels in the serosa of the small intestines. A hard faecal tumour was found in the colon, which was crushed between the fingers and kneaded toward the rectum. No motion was obtained. The child slept quietly after the operation, but sank in a few hours and died on the 24th. *Post-mortem* examination revealed ulceration in the sigmoid flexure and in the descending colon. The former had led to perforation. The caecum and the ascending and transverse colon were dilated, and the mesenteric glands were enlarged. In discussing the case, Glaserfeld comes to the conclusion that the constipation was congenital. He further points out that neither aperients nor any form of diet appeared to have any influence on the constipation. He therefore believes that the condition must have been due to some physiological change in the wall of the large intestine, which did not produce any corresponding anatomical change.

315. Deglutition Rales.

ISRAEL-ROSENTHAL (*Ugeskrift for Laeger*, No. 14, 1909) is of the opinion that sufficient attention has not been drawn to the presence of the so-called "false râles," or râles heard over the apices of the lungs, and which have some extraneous cause. Most textbooks warn students against the "dry râles" that often arise in the shoulder joint, or in its muscles, or those caused by the friction of the scapula against the thorax; but the most frequent cause of an error in diagnosis—the râles caused by the act of swallowing—are scarcely mentioned. The "Schluckgeräusche" of the Germans, first described about fifty years ago, are described by Gerhardt as soft, moist râles heard along the spinal column, and by Guttman and Eichhorst as also heard along the trachea on the left side; but the fact that the sounds caused by the act of swallowing can also be transmitted to the apices of the lungs, appears to be known to but few observers. Turban mentions "oesophagus sounds" as a possible error in diagnosis, but the only author who has described them fully is Petersson in his *Fysikalisk Diagnostik* (Upsala, 1908). According to the author's (the writer of the present monograph) experience, one can hear in most people, in connexion with the act of swallowing, sounds simulating râles over the apices of the lungs, although these sounds vary in extent, strength, and character. They are heard, not only above the clavicle, according to Turban, but also below it, down to the second rib; at the back they are heard not only along the spinal column, but in the suprascapular region and even below the spine of the scapula. They are generally present on both sides, but are loudest on the left side, and are always more pronounced and constant above the clavicle and the spine of the scapula. The sounds are mostly of a moist character, and appear as medium, subcrepitant râles with a slight indication of a musical sound caused by their formation in a chamber of resonance. More rarely the sounds are of a "half-dry" character. If there is present infiltration of the apex with bronchial symptoms, these râles acquire a pronounced bronchial character. These sounds may be distinguished from true râles by taking note of the following facts: (1) The deglutition râles are not restricted to the act of respiration, but are present both during inspiration and expiration and during the pauses between them, whereas the real moist râles are principally heard during inspiration, especially at its end, much less during expiration, and not at all during the pauses. (2) The act of swallowing can be easily controlled by placing the finger on the trachea when auscultating. (3) By making the patient hold his breath and swallow during auscultation, one is able to note the resemblance in number and character between the sounds heard after a cough and those caused by the act of deglutition. But it must be noted here that deglutition often becomes more difficult and the sounds caused by it weaker after repeated acts of swallowing. (4) By following with the stethoscope the deglutition sounds from the trachea outwards it is also possible to control the resemblance between the sounds. (5) Intelligent patients can be persuaded to omit the usual act of swallowing after coughing. But it can be absolutely prevented by making the patient hold his mouth open during auscultation. After reviewing the various theories about the genesis of these sounds, the author is inclined to the opinion that they are produced in the pharynx, partly because the sounds are loudest over the trachea, and partly because the pharynx must necessarily be a better chamber of resonance than the oesophagus.

SURGERY.

316. Results of Operative Treatment of Cancer of the Stomach.

PONCET (*Bull. de l'Acad. de Méd*, No. 12, 1909) publishes a statistical report on the results of operative intervention in 211 cases of cancer and ulcer of the stomach. This report, prepared with the assistance of Delore and Leriche, deals with cases observed by the author in the course of the last six years. Of 137 cases of gastric cancer regarded as operable, 40 were treated by gastrectomy and 97 by palliative operations, such as gastro-enterostomy, gastrostomy, and jejunostomy. The radical operation of gastrectomy, which the author states was as free as possible, and more or less extensive, resulted in the high operative mortality of 35 per cent. Death in the 14 fatal cases was, it is stated, rarely due to shock, and is attributed to several diverse causes, as, for instance, haemorrhage, peritoneal infection, and acute dilatation of the stomach. It might, the author acknowledges, have been avoided in some few instances by a more rigorous technique and by abstention from operative intervention. In his report on the subsequent fate of the 26 patients who recovered from the immediate results, the author excludes 8, who either were lost sight of, or who, though alive and quite free from recurrence, had not when last seen passed over an interval of more than six months from the date of operation. The remaining 18 patients are ranged under three categories. The first of these, including instances of rapid recurrence or generalization of the disease, shows a death-rate of 40 per cent. in the course of the first twelve months. The data given under the second category show that the proportion of fairly prolonged recoveries is about 34 per cent. Seven patients who lived over the first year died after an average interval of twenty months from the time of the gastrectomy. The frequent occurrence of early relapse after gastrectomy cannot, it is urged, be regarded as a proof of the total failure of this operation in the treatment of cancer. It is, the author holds, the best of the palliative methods, as it favours a complete restoration of health during the free interval. Gastro-enterostomy is also capable of affording

much relief, but this in cases of gastric cancer is a very serious operation, and almost as fatal as gastrectomy. Gastrostomy and jejunostomy are indicated only in extreme cases, and each has the disadvantage of causing a post-operative infirmity. Under the third category are included five instances of patients who when last seen had remained free from recurrence for more than twelve months. The free interval has in one of these cases been three years and a half, and in another as long as five years and ten months.

317. Thrombosis of Inferior Vena Cava.

STILLMAN AND CAREY (*Amer. Journ. of Med. Sciences*, March, 1909) report two cases of thrombosis of the inferior vena cava, the first being acute and possibly a sequel of influenza, and the second being chronic. Case I, a man aged 26, suffered from influenza a fortnight previously, but had felt well for a week. While lifting a heavy weight, he was seized with severe pain in the right side, followed by abdominal tenderness and some ascites. Five days later the abdomen was enormously distended, tense, symmetrical, and tympanitic, with slight tenderness. The legs and external genitalia were very oedematous and cyanosed, but not tender or painful except for the tenseness due to the oedema which had developed gradually since the onset of the illness. The urine contained no albumen. Operation was refused, and the patient died from exhaustion about three weeks later. The inferior vena cava was widely dilated and thrombosed, containing a partially-organized blood clot extending downwards into both common iliac veins and upwards to the groove in the posterior surface of the liver. The walls were much thickened, fused together, and firmly adherent, the lumen being obliterated. The liver was markedly rotated to the right with enlargement of the left lobe, and this occupied almost the position normally occupied by the right lobe. Influenza may have been the primary cause producing a secondary thrombo-phlebitis with extension into the inferior vena cava, or the strain of lifting may have caused the tilting over of the liver to the right, thereby causing a twist of the vena cava and consequent thrombosis. Case II, a man aged 42, complained of swelling and ulceration of the legs. For the past twenty-one years there had been a history of alcoholic excess, with periodic attacks of fever, at first occurring once a year, but latterly once in three weeks. The present illness started suddenly in 1893 with severe pain in the left calf, followed by considerable swelling as high as the knee, and two days later the right leg became similarly affected, with swelling of the whole leg. Three weeks later a left pleurisy developed, and after three months ulcers formed on both legs, and these have persisted ever since, occasionally healing at times and then breaking down again, and the veins on the left side of the abdomen became dilated and tortuous, while the attacks of fever became more frequent. It is assumed that at the outset there was a thrombus in the left popliteal and in the right femoral veins, which extended upwards to the lower part of the inferior vena cava, while the pleuritic attack was probably caused by a small portion of clot becoming dislodged, and causing infarction of the lung. Objectively the most important symptoms are oedema of the regions drained by the thrombosed portions of the inferior vena cava, and the establishment of a collateral circulation, while pain and fever are frequently accompanying symptoms, the latter depending rather upon the primary disease than upon the thrombosis.

318. Reflex Scoliosis.

M. DIEULAFÉ (*Revue d'Orthopédie*, January, 1909) reports a case of sclerosis associated with perinephritic abscess. The patient, a man aged 35, was seen about two and a half months after what was probably the onset of the abscess. There was no great tenderness in the right loin, but a rigidity of muscles and a sense of resistance. The scoliosis was most marked in the lumbar region, with the convexity to the left, and a compensatory curve in the dorsal region. The history of the onset, the general state of emaciation and the facies following, the presence of rigidity of the lumbar muscles on the right side, and the scoliosis, led to the diagnosis of a purulent collection in the region of the kidney. The absence of signs of vertebral affection and of urinary symptoms made a perinephritic situation most probable. The abscess was opened and washed out. Three weeks after operation the scoliosis, which improved day by day, was not to be detected. It is evident that the nature of the lesion determined the form of the scoliosis, but the sensibility of the patient was also an element in the causation, together with the intensity of the inflammation and the mobility of the vertebral column.

OBSTETRICS.

319. Prematernity Practice.

J. W. BALLANTYNE (*Journ. of Obst. and Gyn. of the British Emp.*, February and March, 1909) describes the work done in the prematernity ward of the Edinburgh Royal Maternity and Simpson Memorial Hospital during the autumn quarter of 1908. The number of patients treated was 30; there were 5 cases of eclampsia, 3 of albuminuria without eclampsia, 4 of accidental haemorrhage in pregnancy, 3 of placenta praevia, 4 of threatened abortion, 2 of retroversion of the gravid uterus, 2 of phlebitis in pregnancy, 2 of heart disease (1 of which was complicated by buccal haemorrhage and gingivitis), 1 of gonorrhoeal rheumatism, 1 of marked contraction of the vagina and vulva, 1 of chorea gravidarum, 1 of hydramnios complicated by twins, and 1 case sent in because of the occurrence of fetal death in each of two previous pregnancies. The average age of the patients was somewhat high—namely, 30; 9 of the patients were primiparae, the rest multiparae, 1 being in her seventeenth pregnancy. The result of treatment as far as the mothers were concerned was good; only one died, the patient who suffered from chorea, and she was admitted in an almost hopeless condition only two days before her death. Of the children, 10 out of 25 were stillborn, but only 1 of the 10 had reached the ninth month, 5 being under the seventh month; 6 or 7 were macerated as well as stillborn. The details of the individual cases are given. The 5 cases of eclampsia have several features in common. There was albuminuria and diminution in the amount of urine passed; the pregnancy continued for a time after the onset of convulsions. The treatment consisted in the use of hot packs, of enemata, of acetate of potash mixture, of Henry's solution to act upon the bowels, and of strict milk diet. In all the cases also the mother recovered. Four of the patients were primiparae, 1 was a multipara; the number of convulsions was 5 in one case, 3 in another, 2 in each of two others, and 1 in the fifth; the most serious case was that of the multipara, and she was also the only one with signs of renal disease before the pregnancy. In addition to the treatment described above, in 3 cases a ½-grain suppository of morphine was given, in 2 cases thyroid extract was used, in 1 of them more than 100 grains altogether of the extract being given, and in 1 case venesection was twice performed, saline solution was transfused, and dry cupping performed. In only 1 case—that of the multipara—was labour induced, and this was the only case in which recovery was doubtful for some days after labour. In 4 cases the fetus was born dead and macerated, and the author inclines to the opinion that the condition which caused eclampsia also caused the fetal death, and that the death of the fetus relieved the renal overstrain and prepared the way for recovery. The 4 cases of accidental haemorrhage were treated by rest in bed, use of enemata, and a morphine suppository (¼ grain). Labour set in in each case a few days after admission; 1 only of the infants survived, 1 died after leaving the hospital, 1 after six hours, and 1 was stillborn. The 3 cases of placenta praevia did well; in 1 of them the os was dilated normally under choloroform; in all of them the fetus was premature and stillborn. In 3 out of the 4 cases of threatened abortion the pregnancy continued. In the case of "habitual" fetal death the patient came in at seven and a half months with a history that fluid had been coming away for three days; labour was induced and a child born in a state of asphyxia pallida; efforts to resuscitate the child were unsuccessful, and it was afterwards found that the thorax could not dilate because of the presence of free fluid in the thorax and abdomen. The author claims that the records given prove that a rapidly increasing demand exists among medical men for some place—either a hospital or nursing home—where cases of morbid pregnancy can be kept under observation and suitably treated, and that there are indications that the patients themselves are beginning to share in this feeling; of the 40 patients, 16 were sent in by medical practitioners outside. The records also prove that many of the most serious cases in obstetric practice occur in the first half of pregnancy. Ballantyne recommends that prematernity cases should be treated in a semi-detached building, rather than in the maternity hospital itself.

320. Pregnancy and Operations for Gall Stones.

ROITH (*Monats. f. Geb. u. Gyn.*, April, 1909) has prepared a monograph including a series of cholecystostomies and cholecystectomies performed on pregnant and puerperal subjects, with general considerations on cholelithiasis in relation to gestation, and the influence of operations on the gall bladder and ducts on pregnancy and the puerperium.

Experience teaches the surgeon and obstetrician that pregnancy is not in itself a contraindication to such operations. Expectant treatment, according to clinical evidence, is not safer than under other conditions. The risk to life when operative measures are undertaken is not greater than under other conditions. The prognosis as to interruption of pregnancy is dependent on the stage of gestation, on the degree of jaundice and infection, and on the extent and duration of the operation. Up to the middle of gestation the risk of abortion is trifling, but it is otherwise later on. On that account cystostomy through a free oblique incision under the ribs is preferable during the later months to more complicated measures, but this rule only applies when the continuance of the pregnancy is important and safe on obstetrical grounds. In the worst cases of the whole class, where the bile symptoms are severe near term, it may be necessary to induce labour before operating on the gall bladder or ducts. Roith advocates vaginal Caesarean section. This measure avoids the perils of labour pains, and the uterine incision will lie far away from the area of operation, which is nearly always infected. When pains set in after operation, it is still advisable to terminate labour artificially at once, as the uterine contractions may promote the dissemination of infection from the operation wounds. Anaesthesia requires great care in all cases of this class.

GYNAECOLOGY.

321. Adrenalin in Caesarean Section.

BOGDANOVICS (*Zentralbl. f. Gynäk.*, No. 19, 1909), in a case of Caesarean section where the wounded uterus contracted badly after extraction of the fetus, acted on the recommendation of Neu, who used adrenalin to bring about contractions. Schäfer had long since pointed out that this compound acted very definitely on the muscular tissue of the non-gravid uterus. Bogdanovics's patient was a primipara, aged 31, with a typical flat, rickety pelvis, and knock-kneed. The child was well developed, and the head presented; the os was beginning to dilate. The mother desired to have a living child and consented to any operation likely to save it. Symphysiotomy and delivery of the child through the rigid soft parts of this elderly primipara seemed dangerous on the child's account. Caesarean section was preferred. A transverse fundal incision was made, the child extracted alive, the membranes removed, and the uterine wound sutured with catgut. The uterine muscle, however, was highly atonic, and free irrigation with warm saline solution failed to set up contractions. Bogdanovics therefore injected into four different points in the uterine wall 1 c.cm. of a 1 in 10,000 fresh solution of Richter's tonogen, a preparation of adrenalin recommended by Neu. The uterus at once contracted till it became of stony hardness, and the haemorrhage from the incision ceased at once. The operation was concluded without any further complications and the puerperium was normal.

322. Foreign Body retained Nine Years in the Uterus.

WINDISCH (*Zentralbl. f. Gynäk.*, No. 19, 1909) reported at a meeting of the Royal Hungarian Medical Association last year that he was consulted by a woman aged 32, many years divorced, on account of uterine haemorrhages and hypogastric pains, which had lasted for nine years. It transpired that she had been under treatment in several hospitals. For six months the bleeding had become very severe, and there was much bearing-down pain in the rectum. The uterus was enlarged and hard, and there was parametritic exudation surrounding the rectum as well as the cervix. Rest and the administration of ergot had no effect. There was no rise of temperature. At length Windisch determined to use the curette, and directly it was introduced a little piece of softened wood bent in two was extracted. The patient recovered at once, and, when the foreign body was shown to her, she stated that nine years previously she had pushed it into the uterus to stop haemorrhage. Windisch shortly afterwards came across a similar case. The piece of wood had been slipped into the uterus eight years before the patient consulted him, but he found that it had perforated the posterior wall of the cervix, and projected from the portio, so that it was detected at the first exploration of the vagina, and was extracted with ease. There was purulent exudation, and the patient's after-history could not be traced. Von Kubinyi, in discussing Windisch's case, stated that he once found a piece of wood in a pyosalpinx; it appeared that abortion had been attempted.

THERAPEUTICS.

323. The Treatment of Nervous Bronchial Asthma.

N. VON JÁGIE (*Berl. klin. Woch.*, March 29th, 1909) points out that, although a large number of medicaments have been recommended for the treatment of asthma, none of them are consistently reliable. In America adrenalin is not infrequently employed for this purpose, but this drug is but rarely used in Europe. For the last three years the author has employed adrenalin as a means of cutting short the acute attack, and has found that it acts promptly and well. He discusses the action of adrenalin, and points out that at present we know that the superficial blood vessels are constricted and that the coronary arteries are dilated. Certain vessels, no doubt, are dilated by adrenalin, and it is open to doubt whether the vessels in the lungs are constricted or dilated. It is, however, suggested that a constriction of the pulmonary vessels would have the effect of reducing the swelling of the mucous membranes of the lungs, and inasmuch as the attack of asthma depends on a stimulation of the vagus nerve and a disturbance of the vasomotor secretory function of the mucous membranes, the beneficial action of adrenalin would be explainable if an anaemizing effect takes place. He further suggests that it may act by stimulating the sympathetic as atropin does. He is doubtful whether the adrenalin treatment is of permanent use. The results of animal experiments in producing arterio-sclerosis renders it imperative for the clinician to be cautious in giving adrenalin for a long time. He has, however, given it to one patient, a girl, repeatedly, and when examined two years later, no trace of damage to the vascular system could be detected. He appends some clinical histories, which show the prompt manner in which the attacks terminate in response to subcutaneous injections of 0.5 c.cm. of a 1 in 1,000 solution of adrenalin.

324. Thyresol.

A. HIRSCHBERG considers that it is a considerable advance in therapeutics that the chemical manufacturers have succeeded in freeing sandalwood oil of its irritating effects on the kidneys, stomach, and skin. The Farbenfabrik (vorm. Bayer and Co.) of Elberfeld have introduced a preparation called thyresol, which is stated to be a santalol methyl ether (*Berl. klin. Woch.*, March 22nd, 1909). Various therapeutic reports dealing with the effect of thyresol in gonorrhoea in the male have appeared and have dealt favourably with it. Thyresol is so constituted that no santalol is set free in the organism, so that the usual irritative action of sandalwood oil should not occur. Thyresol is a pale yellow fluid, possessing a weak aromatic odour, is insoluble in water, but is soluble in absolute alcohol, ether, and chloroform. Cats and rabbits tolerate 1 gram well by mouth. Hirschberg has employed it in a large number of female patients in Dr. Nagel's clinic and policlinic in Berlin. Thyresol is put up in drops, tablets, and capsules. The tablets are made up with carbonate of magnesium, each tablet containing 0.3 gram of thyresol. All the patients took it well, and no signs of irritation of the kidneys, gastro-intestinal tract, or skin followed its use. A few nervous patients complained of eructations, but this he ascribed to hyperacidity of the gastric secretion. The acid acting on the magnesium carbonate produced an excess of gas development. As to the therapeutic effect of thyresol in female gonorrhoea, he points out that the urinary and genital apparatus in the female is separate, unlike in the male. It is therefore theoretically impossible to influence the affections of the genital passages by internal treatment, while those of the urinary passages can be so dealt with. Local treatment had therefore to be employed for the genital affections. Acute and chronic gonorrhoea, with profuse discharge, granular colpitis, and urethritis, were beneficially influenced by the medication, and he further found that non-gonorrhoeal cystitis was improved by thyresol. No details of any kind are given by which the reader could judge whether the benefit of the treatment should be ascribed to the internal or to the local treatment.

PATHOLOGY.

325. Brieger's Cachexia Reaction.

THE antifermentative power of human serum has recently been studied from the point of view of utilizing variations in this power for the diagnosis and prognosis of disease. Brieger and Trebing found that the serum of persons suffering from cancer and other diseases in which cachexia is a frequent symptom inhibited the action of trypsin more powerfully than normal serum does. The estimation

of this power was judged by allowing a 1 per cent. solution of trypsin to act on albumen in the form of serum plated out on Petri dishes, and determining how much of the serum of the patient is necessary to stop the formation of a depression or dell due to digestion of the coagulated serum. They found that one loopful of fresh serum mixed with four loopfuls of trypsin solution marked the limit of the power of the normal serum, and expressed this as a positive reaction of 1 : 4. F. Landois (*Berl. klin. Woch.*, March 8th, 1909), in studying this problem, preferred to use a 1 per cent. trypsin glycerine solution, as he found that unequal suspensions of undissolved trypsin could lead to varying results and also that an aqueous solution does not keep so well as the solution containing glycerine. Another difference between his technique and that of Brieger and Trebing was that he used drops from a pipette instead of loopfuls of solutions. A source of error which he admits lies in the fact that the drop of thickish glycerine solution is probably not of the same size as the drop of more limpid serum. However, this error was constant through all his experiments. He found that the normal dilution, or, as he terms it, index, was between 1 : 2 and 1 : 3. Testing the index on cancer patients, he did not obtain a higher antitryptic power than 1 : 7, while the majority of the patients gave an index of 1 : 3—that is, practically a normal index. He found, however, that when cachexia was present the index tended to be higher than normal. He found that in a case of hysterical anorexia, with marked loss of weight, the index was normal, which he ascribes to the difference between loss of weight due to hunger and loss of weight due to destruction of leucocytes and proteids. In septic processes the index rises hand in hand with the destruction of leucocytes. He considers that the cause of the increased antitryptic power lies in the destruction of leucocytes and the liberation of leuco ferment. A. Braunstein (*Deut. med. Woch.*, April 1st, 1909) also deals with the same problem. He utilized the same technique as Brieger and Trebing, and obtained the same degree of inhibition of tryptic fermentation. Brieger and Trebing found that in 91.6 per cent. of cancer patients the reaction was positive; von Bergmann and Meyer found that 92.7 per cent. of cancer patients gave positive reactions; and Braunstein found that 91.7 per cent. of cancer patients gave the reaction. Of the non-cancer patients, Brieger and Trebing found a positive reaction in 23.9 per cent., von Bergmann and Meyer in 24.2 per cent., and the author met with it in 27.7 per cent. Taken together with other signs and symptoms, he regards the reaction as a valuable diagnostic means. This contention is supported by cases. The explanation of the reaction given is that the destruction of albumen permits of an absorption of proteolytic ferment and thus to the production of antiferment. He supports this theory by detailing the results of experiments. Rabbits and guinea-pigs were given phloridzin and also phosphorus, both of which are known to lead to the disintegration of proteids. He found that the antiferment power of the serum could be doubled in each case. He compares the reaction to the find of lactic acid in the gastric secretion; far-reaching conclusions cannot be drawn from it with safety. From Brieger's laboratories, F. Brenner (*Deut. med. Woch.*, March 4th, 1909) deals with the reaction in anaemia and details some observations which he made in a series of cases. The haemoglobin content of the blood and the red and white blood cell counts are tabulated and compared with the antitrypsin determination. In the 35 cases, the reaction varied from 1 : 2 up to 1 : 10. Only two gave normal values (that is, 1 : 3). In about half the cases the author found a correspondence between the haemoglobin and antitrypsin. In the rest of the cases no such correspondence was noted. No parallel was found between the altered number of corpuscles and the altered condition of the antiferment. But the author states that the antitryptic value indicated the severity of the illness. He followed the reaction through the condition during treatment. Twenty of the patients were treated with a natural arsenic water (Max-quelle from Bad Dürkheim), which was given in increasing quantities for thirteen days, and decreasing quantities from the thirty-first day, so that a course extended over forty-two days. Here, again, he believes that the improvement in the haemoglobin content of the blood and of the general condition went *pari passu* with the decrease of the antitryptic power of the serum. He goes as far as to state that the reaction can be utilized as an indication of the improvement of the condition. In the rest of the cases arsenic pills were given, and in these cases he found that both the improvement in the condition and the lessening in the antitryptic power was less rapid and less marked, but just as parallel as in the first series.

328. Bovine and Human Tubercle Bacilli.

FIBIGER AND JENSEN deal with the wide question of the relation existing between tuberculosis and tubercle bacilli of man and tuberculosis and tubercle bacilli of the ox, in a very detailed article in the *Berl. klin. Woch.*, Nos. 42, 43, 44, and 45, 1908. They take into account the work which they have previously carried out and published, and also the publications of other observers. They start with an account of a number of cases of various forms of human tuberculosis and the characteristics of the bacilli found in these cases. They tested the virulence of the bacilli in each case on guinea-pigs, rabbits, and calves, and paid especial attention to the types of pathological changes met with in each case and compared these with the types met with in cases in which the bacilli presented other virulent characteristics. They then proceeded to classify their cases according to the degree of virulence to the various animals, and considered this standpoint in connexion with the possible sources of bacilli. Next the morphology of the bacilli in cultures was studied, and attention was paid to the reaction of the bacilli in glycerine cultures, showing the value of the phenomenon of the alteration of slight acidity to neutrality or weak acidity described by Th. Smith. Having considered these and other points in connexion with the subject, they come to the following conclusions: They do not recognize a sharp differentiation between the type of human and of bovine tubercle bacilli. Bovine bacilli are not always strongly pathogenic to calves, and bacilli which are gained from human sources and for which there appears to be no reason to ascribe a bovine origin may prove much more virulent to calves than the true bovine type. The virulence of bacilli gained from human sources is very variable, and can be high, even in cases in which the type is not characteristic of the bovine origin. They therefore determine that inoculation into rabbits is not a safe method of distinguishing between bovine and human bacilli. They found that no constant differences in the anatomical changes produced by the bovine and human bacilli in man can be found. Even the morphological characteristics of the two types are too little constant to justify conclusions being formed in this connexion. The cultural characteristics are so extremely variable and depend on so many external conditions that it is impossible to distinguish between bovine and human bacilli in this way. With regard to Th. Smith's reaction test, they point out that strains of bacilli are at times met with which correspond in every other respect to the human type, and which behave like bovine bacilli in turning the glycerine bouillon alkaline. It is therefore not permissible to utilize this phenomenon for the distinction between a human and a bovine type. They consider it necessary to investigate the question further in order to determine whether the tubercle bacillus is altered in its characteristics by a sojourn in the human or animal organism, and whether a transition from one to the other type does not at times actually take place. This question is of paramount importance, inasmuch as it may yield an indication as to whether the bacillus of bovine tuberculosis is highly virulent to human beings and vice versa, and whether the change in characteristics is easily induced or not. The subject further has a considerable biological interest. A careful perusal of the original article is strongly recommended to all students of the modern tuberculosis movements, as it in some respects amplifies the work done by others, and thus throws light on a problem which is not yet settled. It is impossible to give all the details in this place.

327. Properties of Serum in Trypanosomiasis.

MESNIL AND BRIMONT (*Ann. de l'Inst. Pasteur*, February, 1909) find that the serum of animals affected with a trypanosomiasis of a subacute or chronic type acquires very quickly special protective properties, and, when mixed with the trypanosomes, prevents the infection of mice. The appearance of these properties and their degree are independent of the progress of the disease; but they rapidly diminish, when they survive at all, after a cure has been effected. Up to a certain point this protective power is specific, and may assist in the differentiation of the trypanosomes. It resists heating to from 56° to 64° C. The active substances attach themselves, at least in part, to the body of the trypanosome, which may then be injected with impunity into mice. *In vitro* the active serums do not exert any destructive action on the trypanosomes, even when mouse serum is added as complement. But *in vivo* there is found in the peritoneal cavity of mice which have received serum and virus a rapid and intense phagocytosis of the parasites. Hence it seems that the effect of the serum is to render the trypanosomes susceptible to the leucocytes.

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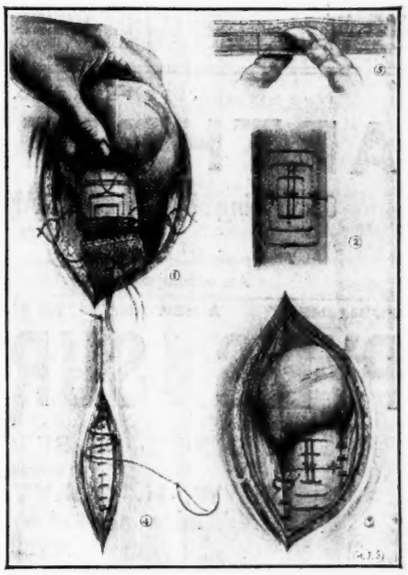

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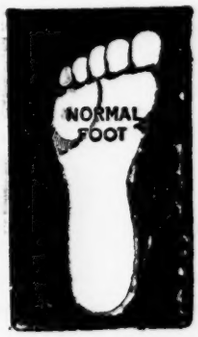

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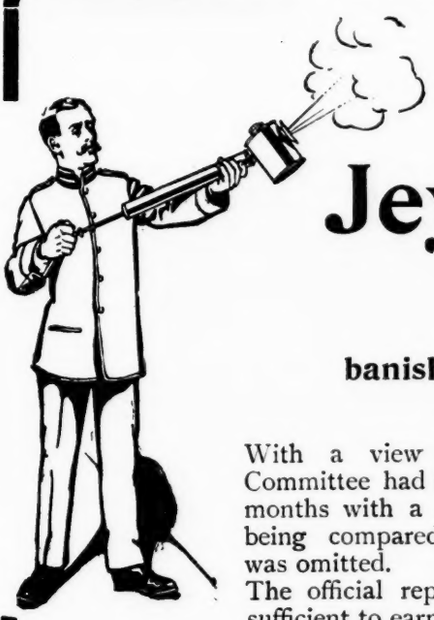

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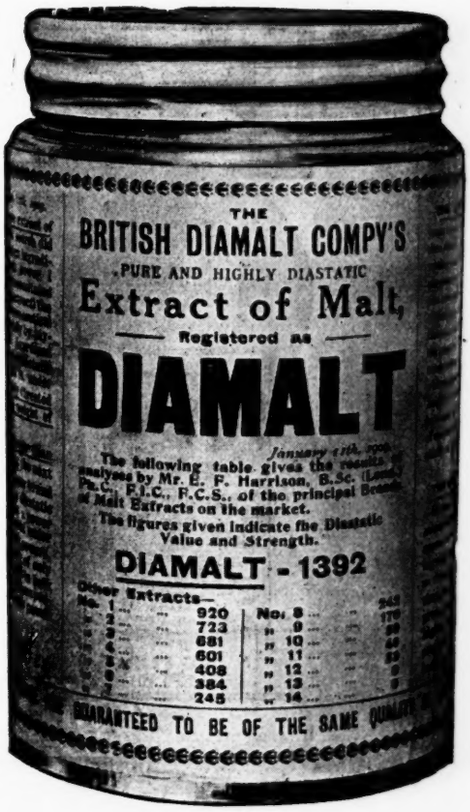

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Improves the appetite (in 3-4 days).
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QUININE PHYTIN
Neutralises the depressing effect of Quinine. Stimulates all metabolism to increased activity.

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In this preparation advantage has been taken of the solubility of Pepsine in Glycerine to produce a convenient and desirable *liquid form* of this valuable medicine; whilst the preservative qualities of the menstruum confer upon the Acid Glycerine of Pepsine the property of keeping for any length of time.

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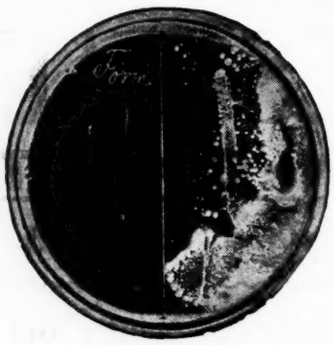

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SOURCE DU PAVILLON

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GRAND PRIZE
THE HIGHEST DISTINCTION
to any mineral water in the Vosges (France)

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We are constantly receiving reports from medical men regarding the suitability and advantages of Angier's Emulsion for use during the warm months of summer, not only in pulmonary affections, but to an even greater extent in gastro-intestinal disorders of a catarrhal, fermentive, ulcerative or tubercular nature, as also in genito-urinary affections and in nervous and anæmic cases. Medical men who have had the opportunity to closely observe the clinical effects of

ANGIER'S EMULSION

(Petroleum with Hypophosphites.)

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In **Diarrhoea, Dysentery** and **Cholera Infantum,** and all **Gastric** and **Enteric Diseases,** in which an **Easily Assimilated, Non-Irritating, Powerful, Concentrated Food** is essential, **Valentine's Meat-Juice Nourishes** and **Sustains.**

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TRADE MARK
PREPARATION
NUTRIO PRIME
MEAT JUICE.
The result of an Original Process of Preparing Meat and extracting its Juice, by which the elements of nutrition (most important to life) are obtained in a state ready for immediate absorption.
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The quality is the same as the original unflavoured which will be supplied as hitherto.

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This tonic food is now so tastily flavoured that it tempts the most fastidious palate

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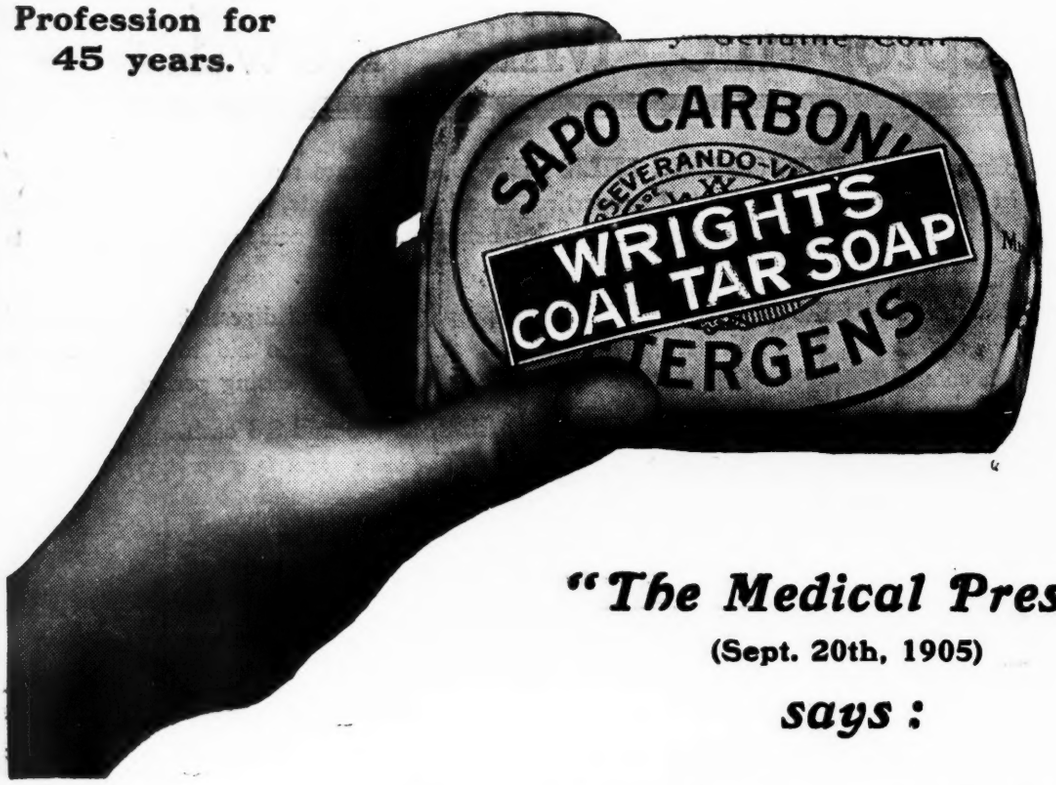

"The Medical Press"
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BENGER'S FOOD, Ltd., Otter Works, MANCHESTER.

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ERGOAPIOL
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The widespread employment of the preparation in the treatment of anomalies of the menstrual function rests on the unqualified indorsement of physicians whose superior knowledge of the relative value of agents of this class stands unimpeached.
By virtue of its impressive analgesic and antispasmodic action on the female reproductive system and its property of promoting functional activity of the uterus and its appendages, Ergoapiol (Smith) is of extraordinary service in the treatment of
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SQUIRE'S GLYCEROPHOSPHATE SYRUP.

s the best form in which to administer the Glycerophosphates.

It is delicately flavoured and palatable, and makes an excellent tonic which will not distress the most delicate stomach.

INVALUABLE IN NEURASTHENIA.

DOSE—One to two fl. dr. = 3·6 to 7·1 c.c.

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It possesses the full nerve-tonic properties of the former with the muscular-tonic properties of the latter.

DOSE—One to two fl. dr. = 3·6 to 7·1 c.c.

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AN INTENSIFIED NERVE TONIC.

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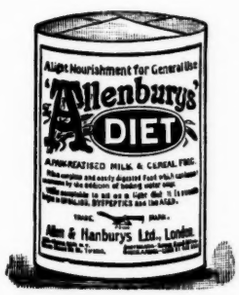

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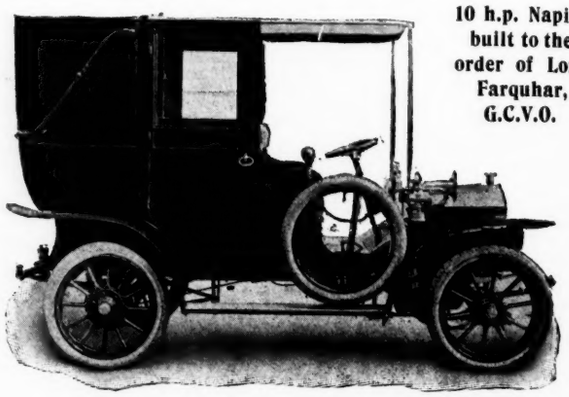

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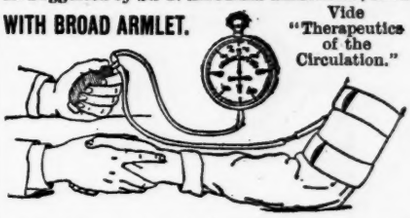

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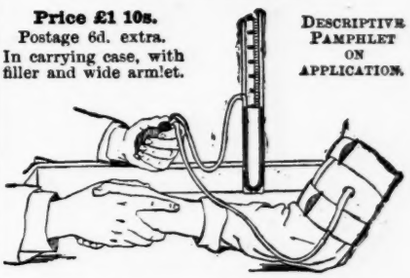

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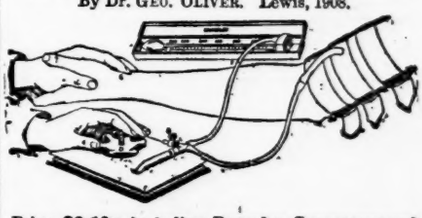

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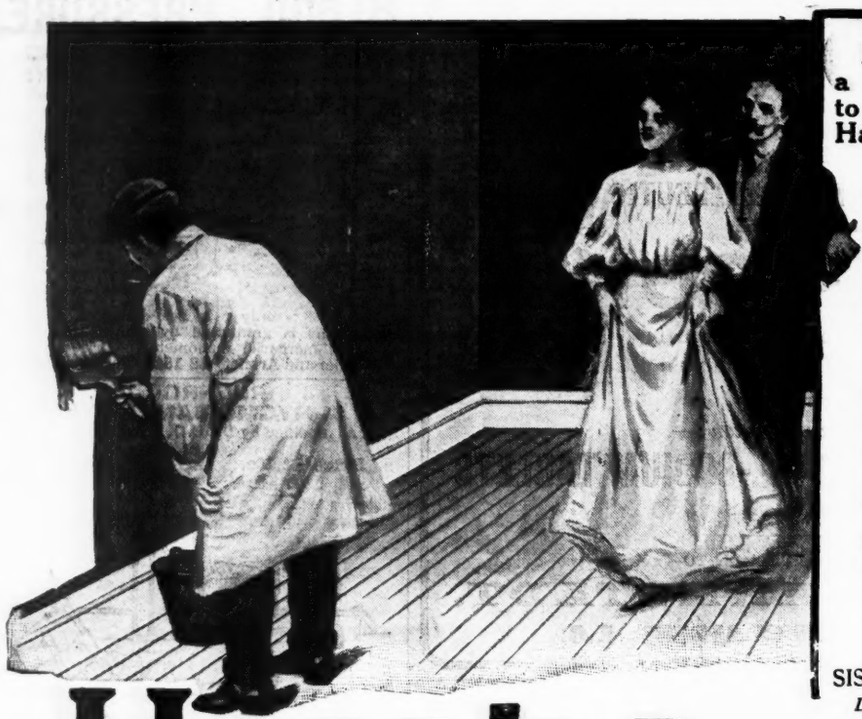

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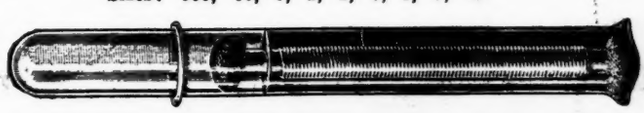

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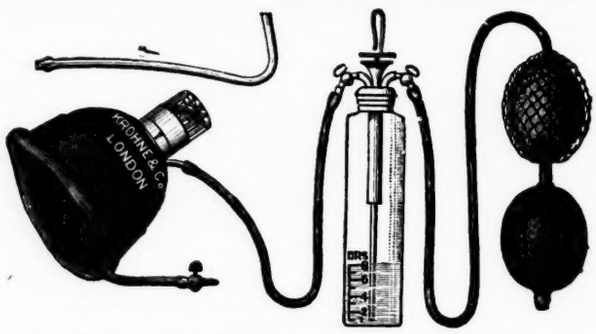

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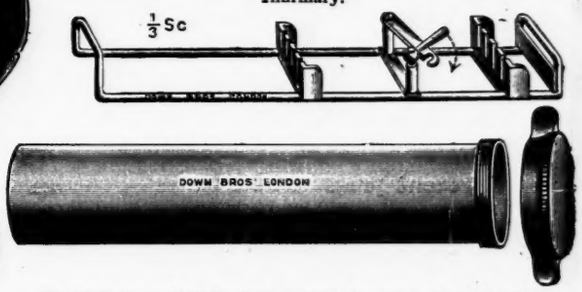

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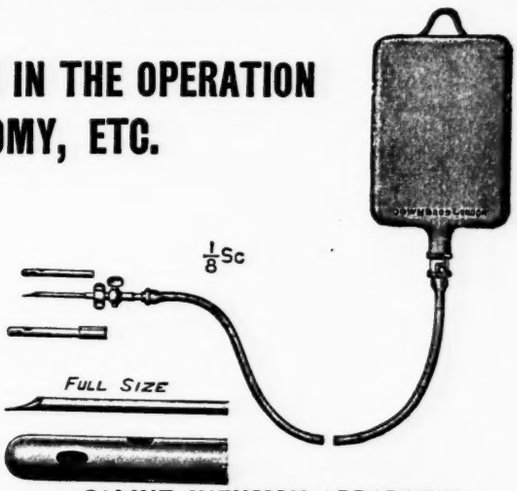

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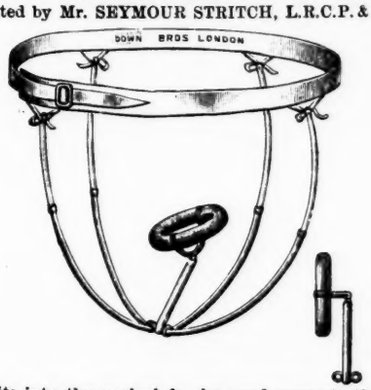

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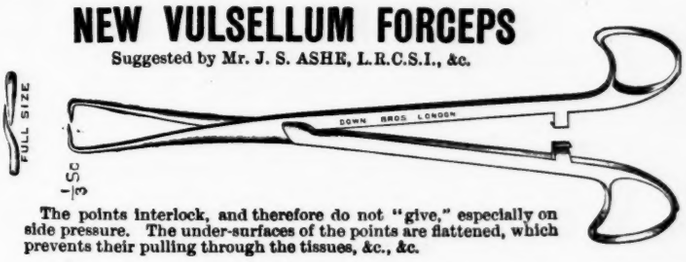

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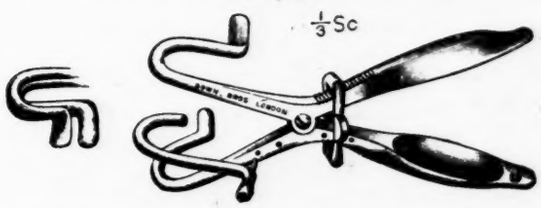

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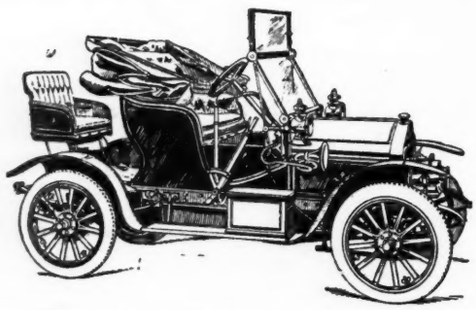

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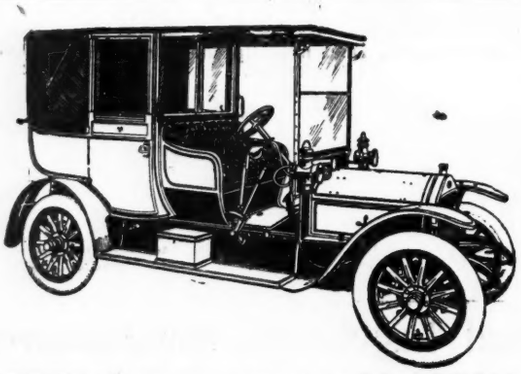

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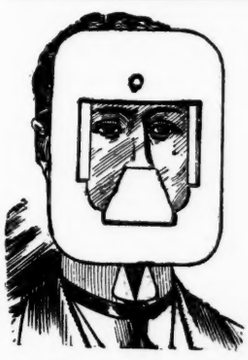

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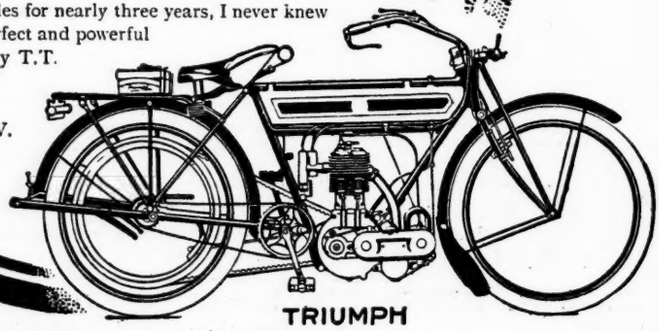

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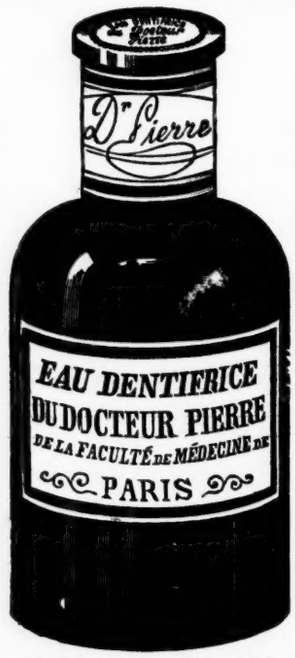

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For Gentlemen suffering from Alcohol and Drug Inebriety; also for Gentlemen convalescing after illness. In a most healthy part of the country, 10½ acres of grounds, about 350 feet above sea-level. Electric light throughout from private installation. Golf, Cricket, Tennis, Croquet, Library, Billiards, Photographic Dark Room, Gardening, Carpenter's Shop, Poultry, &c. Quarter-mile from Station, G.E.R. **Two Resident Physicians.**

No Infectious or Consumptive Cases taken. Inebriety Patients are admitted voluntarily only, either privately or under the Inebriates' Acts.

Terms 1½ to 3½ Guineas. Telephone: P.O. 3 Buntingford. Telegraphic Address: "RESIDENT, BUNTINGFORD."

NEWMAINS RETREAT, NEWMAINS, LANARKSHIRE.

Licensed under the Inebriates Acts.

The House is devoted to the Care of LADIES of the upper classes only, who can be treated either under the Acts or as Voluntary Patients. The place stands high and the estate is extensive, with bracing air and in good shelter. It is very retired and beautiful, well suited for the treatment of Inebriety, Narcomania and other perversions, Neurasthenia, Hysteria, and minor Mental Ailments.

No patient under Certificate of Insanity can be received.

References:—Dr. CLOUSTON, Dr. YELLOWLEES, Dr. RISIEN RUSSELL, and others.

Terms and particulars on applications to "Superintendent, The Retreat, Newmains, N.B." Nearest Station, Hartwood, Cal. Rly.

INEBRIETY AND DRUG HABITS.

Under a new and entirely successful system of treatment, a few gentlemen can be accepted in a private house situated on the outskirts of a charming county town. Within easy reach of London. All outdoor sports provided.—Address, No. 1643, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

BRIGHTON.

Park Gate, Preston Road.

HOME FOR INEBRIATE WOMEN, age over 40. Licensed under the Act. Private Patients received. Terms from 25s. per week. Med. Attendant: R. J. RYLE, M.D., J.P., 15, German Place, Brighton.—Apply, Sister MARY, Lady Superintendent. Nat. Tel. 4701.

INEBRIETY AND ABUSE OF DRUGS

ESTABLISHED 1885.

BUXTON HOUSE, EARLS COLNE, ESSEX.

Private Home for ladies. Terms from 2 guineas weekly. Highest medical and other references. Medical attendant, T. E. PALLETT, M.D.—Address Lady Principal.

Alcohol and Drug Inebriety and Neurasthenia.

INVERNITH LODGE, COLINSBURGH, FIFE, SCOTLAND.

(Licensed under the Inebriate Acts.)

FOR GENTLEMEN ONLY.

Inebriety and Narcomania are treated on definite medical lines, and the most approved scientific means are employed in the curative treatment. Every effort is made to secure reliable therapeutic results, and careful records are kept. The Resident Medical Superintendent has each patient under his personal care and observation, and constant attention is given to inducing a proper attitude towards the exciting cause. The curative treatment is much aided by the healthy situation of the Sanatorium and by its isolation from temptation.

The Sanatorium stands 450 feet above the sea, faces south, and looks out over the Firth of Forth. The climate is dry and bracing. All outdoor and indoor sports. First-class private golf course. Shooting over 800 acres, fishing, tennis, gardening, carpentry, &c. Billiard room (two tables), music room, large private library.

References to leading physicians in the chief centres given on application.

For all particulars apply to the *Resident Medical Superintendent and Licensee*, W. H. BRYCE, M.B., C.M.
Joint Licensee, J. Q. DONALD, L.R.C.P. & S.(Ed.).

Telegrams: "Salubrious, Upper Largo." Telephone No. 8 Upper-Largo. STATION—KILCONQUHAR (N.B. RAILWAY).

PLÂS-YN-DINAS,

DINAS MAWDDWY, MERIONETH.

LICENSED UNDER THE INEBRIATES ACTS.

This Retreat is the only one in the British Isles where it is made a *sine qud non* that every patient entering it must be a *gentleman* of good social status, and the structure, isolation, and extent of sporting property (25,000 acres) is unrivalled in every way.

There are 8,000 acres of grouse moors, large, well-preserved pheasant coverts, enclosed rabbit warren, and 24 miles of fishing in the Dovey, &c.

There are private golf links on the home farms, lawn tennis, dark rooms for photography, excellent library and billiard room.

The Plâs is a modern residence with 27 large bedrooms and seven bath-rooms.

The most recent scientific remedies are in force for the treatment of Inebriety and the abuse of drugs.

References to Dr. SAVAGE, Dr FERRIER, and a large number of leading physicians.

For prospectus, terms, &c., apply Dr WALKER, J.P., as above.

THE ALCOHOL AND DRUG HABITS.

THE GHYLL RETREAT, NEAR COCKERMOUTH, CUMBERLAND.

(Licensed under the Inebriates Acts)

For Gentlemen only.

Patients are treated **individually**, and on a sound scientific basis with the object of building up the health generally, strengthening the will power, and educating the mind to an adverse attitude towards the above habits

The situation of the house in the heart of the Lake District, nine miles from the nearest town and railway station, is unique in its suitability for the work, and its isolation from temptation makes **close confinement quite unnecessary** in the vast majority of cases.

Outdoor and indoor sports and occupation of all kinds are provided. Trout-fishing (own private lake and streams). Rough shooting over 2000 acres, Golf (private 9-hole course), Tennis, &c. Poultry-keeping, Fish-culture, and Gardening may be indulged in, while a workshop and dark room are provided for joinery, woodcarving and photography. The house also containing a full-sized Billiard table. Terms from **£3 3s. weekly**, according to accommodation.

References to leading London and Provincial Consultants.—Full particulars on application to J. W. ASTLEY COOPER, L.R.C.P., Licensee & Resident Physician.

NORWOOD SANATORIUM.

UNDER A COMMITTEE OF WELL-KNOWN MEDICAL MEN whose names will be supplied to any member of the profession on application to the Resident Medical Superintendent.

The object is to apply to the treatment of Alcoholic and Drug Inebriety all available knowledge, and by accurate observation and record of cases to extend that knowledge, and place the therapeutics of Inebriety upon a definite scientific basis. The treatment is of such a nature that the restrictions common to Retreats need not be enforced. In many cases a residence of six weeks is sufficient.

The Sanatorium consists of two detached houses (one for Ladies and one for Gentlemen) situated in beautiful and secluded grounds overlooking the Kentish and Surrey Hills.

All information to be obtained from the Resident Medical Superintendent, Norwood Sanatorium, 93, Church Road, Upper Norwood, S.E. Consultations at 14, Stratford Place, W. (opposite Bond Street Tube Station), on Mondays and Thursdays, 3 to 4 p.m.

Telegrams: "NOROTORIUM, LONDON." *Resident Medical Superintendent:* FRANCIS HARE, M.D. *Telephone:* 240 SYDENHAM.

TREATMENT OF INEBRIETY, AND THE MORPHIA HABIT, ETC.

CAPEL LODGE, near FOLKESTONE

(Licensed under the Inebriates Acts).

Situated on the SUNNY CLIFFS OVERLOOKING THE SEA. This Retreat and Sanatorium offers unequalled advantages for the Treatment of Alcoholic and Drug Inebriety. The latest scientific and Therapeutic methods are adopted. In many cases a residence of six weeks suffices. Bracing sea air and sea bathing—14 acres private grounds. Billiards, golf, etc. Terms 2½ to 4 guineas weekly. For particulars apply E. NORTON, M.D., Capel Lodge, near Folkestone.

INEBRIETY, DRUGS, REST CURE.

TOWER HOUSE.

Avenue Road, Leicester.

PRIVATE HIGH CLASS HOME FOR LADIES.

(ESTABLISHED 1864).

Excellent Medical References.

Medical Attendant - - A. V. CLARKE, M.A., M.D.Cantab.

For terms and particulars apply to Mrs. MILLS.

Telegrams: "THEOBALD, LEICESTER."

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FOR THE CURE OF

INEBRIETY

OR ABUSE OF DRUGS.

Island Estate nearly 4 miles round. No public houses. Full liberty. Bracing air. Boating, Billiards, Badminton, Fishing, Golf, Gardening, Sea-Bathing, &c.

Resident Physician—**Dr. REED.**

Ladies and gentlemen taken as private patients, or under the Act.

Terms: 3 to 5 guineas inclusive.

Apply, F. N. CHARRINGTON, Esq.,

Osea Island, Heybridge, Essex.

Illustrated Guide sent to inquirers.

2nd class Patients at £2 in village.

INEBRIETY.

DALRYMPLE HOUSE,

RICKMANSWORTH, HERTS.

For the treatment of Gentlemen under the Act and privately. Terms, 2 to 4 guineas weekly. Six acres charming grounds on the bank of the river Colne. Tennis, croquet, billiards, concert room, workshops, photographic studio, &c.

Apply to F. S. D. HOGG, Resident Medical Superintendent. Telephone, P.O. 16.

INEBRIETY

HOME FOR LADIES

VOLUNTARY OR UNDER "THE ACT."

ECCLESFIELD, ASHFORD, MIDDLESEX.

Beautiful Residence standing in its own grounds, 50 acres in extent. Large Farm and Dairy. Most healthy neighbourhood. R.C. Chapel on the Estate. Terms 10s. 6d. to £3 3s.

For particulars apply to the MOTHER SUPERIOR.

FOR THE TREATMENT OF INEBRIETY.

THE LODGE, CARNOUSTIE, N.B.

Telephone Number 48.

ESTABLISHED 1900.

The Lodge is situated on the East Coast of Scotland, on the main line to the North, where the climate is dry and very bracing. Golfing, fishing, cycling, tennis, billiards, bowling, &c.

For particulars apply Secretary, The Lodge, Carnoustie, N.B.

Telegraphic Address: The Lodge, Carnoustie.

NORTHLANDS RETREAT,

"ELMHURST,"

20, Bolingbroke Grove, Wandsworth Common, S.W.

Private Licensed Home for Ladies suffering from Inebriety. Large detached House, charmingly situated, facing the common. Sanitary arrangements perfect and modern. Excellent medical references.

Licensees: JOHN ROUND, L.R.C.P. & S., and the Misses ROUND.

INEBRIETY.

MELBOURNE HOUSE, LEICESTER.

PRIVATE HOME FOR LADIES.

Med. Attendant: R. SEVESTRE, M.A., M.D.Cantab. Prin.: H. M. RILEY, Assoc. Soc. Study of Inebriety. 30 years' experience. Excellent Med. References.

For Terms and Particulars apply Miss RILEY or PRINCIPAL. Telegrams: "MEDICAL, LEICESTER."—Nat. Telephone: 769.

STRETTON HOUSE,

Church-Stretton, Shropshire.

A Private HOME for the treatment of Gentlemen suffering from Mental diseases. Bracing hill country. See "Medical Directory," p. 1988.—Apply to Medical Superintendent. 'Phone, 10 P.O. Church-Stretton.

PERITEAU, WINCHELSEA.

HIGH-CLASS PRIVATE ASYLUM.

For 5 mentally afflicted ladies—conducted as a family with nothing to remind th invalids that they are under care. **Ladies only employed as Companion Attendants. Carriage exercise.** Healthy situation. Croquet and Tennis Lawns. Medical Superintendent:—E. W. SKINNER, M.D. — Address, Proprietress, Periteau, Winchelsea.

N.B.—Uncertified patients received at villa residence. Interview by appointment at 27, New Cavendish Street, W.

BARNSLEY HALL,

BROMSGROVE.

Mental Private Patients of both Sexes are received in connection with the new Asylum for the County of Worcester. Extensive private grounds in the beautiful Lickey District.

Terms: One Guinea Weekly

For further particulars and necessary forms apply to the MEDICAL SUPERINTENDENT.

ST. ANDREW'S HOSPITAL

FOR MENTAL DISEASES,

NORTHAMPTON,

For the Upper and Middle Classes only.

President—The Rt. Hon. the EARL SPENCER, K.G.

This Institution is a registered hospital under the Lunacy Act for the reception of private patients of the upper and middle classes only, *and is in no way connected with a County or Borough Asylum in which pauper patients are received.*

It is pleasantly situated, and is surrounded by more than 100 acres of park and pleasure grounds.

Terms from 31s. 6d. a week, according to the requirements of the case.

Patients paying higher rates can have special attendants, horses and carriages, and private rooms in the hospital; or at Moulton Park a branch establishment, two miles from the hospital.

The terms may be reduced in suitable cases on application to the Governors on printed forms supplied. For further particulars apply to the Medical Superintendent.

BRYN-Y-NEUADD HALL, LLANFAIRFECHAN.

The Seaside House of St. Andrew's Hospital.

The Hall is beautifully situated in a park of 200 acres close to the sea, and in the midst of the finest scenery in North Wales.

Patients belonging to the Hospital (or Boarders) may go for long or short periods.

For further particulars apply to the Medical Superintendent, St. Andrew's Hospital, Northampton.

CLARENCE LODGE

(Telephone: 494 Brixton).

CLARENCE ROAD, CLAPHAM PARK,

Stations: Clapham Road and Clapham Common.

A limited number of Ladies suffering from **Mental** and **Nervous Disorders** received for Treatment under a Specialist. Terms from **£3 3s.** a week.

The house has 4½ acres of garden, tennis lawn and winter garden. House at seaside for holiday parties.

Mental Nurses supplied for home nursing.

Illustrated Prospectus from Proprietress, Mrs. FLORENCE THWAITES, B.A.

KINGSDOWN HOUSE,

BOX, near BATH.

Telephone—No. 2, Box.

Licensed for the Treatment of Diseases of the Brain and Nervous System

Terms moderate, for which apply to Dr. MACBRYAN, at the above, or No. 2, Bladud Buildings, Bath.

Bethel Hospital for Mental DISEASES, Norwich.

This endowed Hospital having recently been much enlarged and improved, is now replete with everything tending to promote the comfort and well-being of those suffering from MENTAL DISEASES. Patients of both sexes are received. Terms from thirty shillings weekly. — Full particulars can be had from the Resident Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES,

FINSBURY PARK, N.

A PRIVATE HOME for the care and treatment of ladies and gentlemen mentally afflicted.

Highly situated, facing Finsbury Park. Terms from two-and-a-half guineas a week.

For further particulars apply to the Resident Physician. Telephone No. 888 North (Exchange). Telegraphic Address: "Subsidiary, London."

Coton Hill Hospital for the INSANE, near STAFFORD.

Chairman of the Committe of Management, The RIGHT HONOURABLE THE EARL OF DARTMOUTH.—This Hospital, which is beautifully situated in a high and healthy position, with extensive grounds, cricket field, lawn tennis courts, golf links, &c., is devoted to the care and treatment of the mentally afflicted of the upper and middle classes. Terms on application. Private rooms with special attendants in the Hospital, or semi-detached villas in the grounds can be arranged.

For further particulars, apply, to R. W. HEWSON, Superintendent.

"NORMANSFIELD."

A private establishment for the care and training of the **MENTALLY DEFICIENT.** Patients of either sex, including quite young children, received. Separate houses for the slighter grades of defect.—For particulars apply to the Resident Physician and Proprietor, Hampton Wick.

HAYDOCK LODGE, NEWTON-LE-WILLOWS, LANCASHIRE,

A PRIVATE MENTAL HOSPITAL FOR THE UPPER AND MIDDLE CLASSES ONLY, EITHER VOLUNTARILY OR UNDER CERTIFICATES.

Established for over 60 years, and under the same management for 20 years. Recovery rate 50 per cent.

Situated midway between Manchester and Liverpool, and having associated with it establishments at **Marsden Hall**, in the Colne District of North Lancashire; and at **Greta Bank** in the Craven District of Yorkshire, near Kirkby Lonsdale; also at **Overdale**, near Manchester.

The Staff consists of:—Resident Medical Proprietor	CHARLES T. STREET, L.R.C.P. & M.R.C.S.
Resident Medical Licensee	A. E. CHAMBERS, L.R.C.P. & M.R.C.S.
Assistant Medical Officer	DR. MARSHALL.
Medical Licensee and Superintendent of Overdale and Marsden Hall	P. G. MOULD, L.R.C.P. & M.R.C.S. (late A.M.O. Cheadle Royal Hospital).
Visiting Physicians	SIR JAMES BARR, 72, Rodney Street, Liverpool. NATHAN RAW, M.D., 66, Rodney Street, Liverpool.

Dr. STREET can be consulted at 47, Rodney Street, Liverpool, where he attends every Thursday from 2 till 4 o'clock, or Dr. P. G. MOULD, at Winters Buildings, Manchester, on Tuesdays from 12-30 to 1.30.

Further particulars and forms of admission can be obtained from the Resident Proprietor, Haydock Lodge, Newton-le-Willows.

Patients treated and classified according to their mental condition and social position. Terms from 31s. 6d. a week; private apartments on special terms.

Telegraphic Address: "STREET, Ashton-in-Makerfield." Telephone: No. 11 Ashton-in-Makerfield; No. 2456 Royal, Liverpool, on Thursdays.

PECKHAM HOUSE.

112, Peckham Road, London, S.E.

Telegrams: "Alleviated, London."

Telephone: 1576 Hop.

An Institution licensed for the CARE and TREATMENT of those MENTALLY AFFLICTED of Both Sexes. Private Patients only received. Gardens cover many acres of ground. Conveniently situated. Electric trams and omnibuses from the Bridges and West End pass the door. Moderate Terms.—Apply to Medical Superintendent for further particulars.

NORTHWOODS HOUSE,

WINTERBOURNE, near BRISTOL.

FOR PRIVATE TREATMENT of MENTAL DISEASES.

Situated in a large park in a healthy and picturesque locality, easily accessible by rail viâ Bristol, Winterbourne, Patchway, or Yate Stations. Uncertified Boarders received.—For further information see Medical Directory, page 1983. Terms moderate. Apply to Dr. R. EAGER, or Dr. J. D. THOMAS, Resident Physicians and Licensees for full particulars.

WONFORD HOUSE HOSPITAL for the INSANE, near Exeter.—A Registered Hospital for the UPPER and MIDDLE CLASSES. This Institution is situated in a beautiful and healthy locality, within a short distance of the City of Exeter. There is comfortable accommodation at moderate rates, both in the Hospital itself and at Plantation House, Dawlish, a seaside residence on the South Devon Coast, affording more privacy, with the benefits of sea-air and a mild and salubrious climate. Private rooms and Special Attendants provided if required. Voluntary Patients or Boarders also received without certificates. For terms, &c., apply to P. MAURY DEAS, M.B., M.S.Lond., Resident Medical Superintendent.

FENSTANTON,

CHRISTCHURCH ROAD, S.W.

(Telephone, 175, BRIXTON).

A Private HOME for the Care and Treatment of Ladies Suffering from Mental and Nervous Diseases.

Established 50 years. Formerly at Earl's Court and Peterborough House, Fulham, under **Dr. R. GARDINER HILL.**

The Mansion, with Annexe just renovated throughout, stands on an elevated site in 12½ acres of well-wooded grounds. It commands views over Dulwich and Sydenham, and is well adapted for Open-air Treatment. There are tennis courts, a croquet ground, a large kitchen garden, and an extensive range of glass houses. Voluntary Boarders received, and seaside parties arranged for the summer months. Stations, Tulse Hill and Streatham Hill. For terms, &c.,

Apply to **T. DUNCAN GREENLEES, M.D.Edin.,** Resident Physician.

MARSDEN HALL,

NELSON, LANCASHIRE.

A PRIVATE ASYLUM for the care and treatment of a few patients of both sexes suffering from Mental Disorders. The grounds are extensive and picturesque, and the situation specially healthy. Only a limited number of Patients received. Terms from 31s. 6d. upwards. Carriages kept for the use of Patients. Easy access from Nelson Station (L. & Y. Ry.), also from Colne on the Midland. Medical Superintendent, PHILIP G. MOULD, M.R.C.S., L.R.C.P.; Visiting Physician, GILBERT E. MOULD, M.R.C.S., L.R.C.P. For further information apply to the Medical Superintendent, who can also be seen at Winter's Buildings, St. Ann's St., Manchester, every Tuesday from 12 to 1.30 p.m. Tel. 7611.

THE WARNEFORD,

OXFORD.

HOSPITAL FOR MENTAL DISORDERS.

President: The Right Hon. the EARL OF JERSEY.

This Registered Hospital, for the treatment and care, at moderate charges, of mental patients belonging to the educated classes, stands in a healthy and pleasant situation on Headington Hill, near Oxford. The gardens and grounds are extensive, the internal appointments are comfortable and refined and the premises are lighted by electricity. The utmost degree of liberty, consistent with safety is permitted, and amusements and occupation are amply provided. Parties are sent for change to the seaside during summer. Voluntary boarders are also received for treatment.—For further particulars apply to the Medical Superintendent, Dr. NEIL.

BOREATTON PARK,

BASCHURCH SALOP.

A first-class Country Mansion especially adapted for the reception of a limited number of Ladies and Gentlemen mentally affected.

For particulars apply Dr. SANKEY.

SPRINGFIELD HOUSE,

NEAR BEDFORD.

(Telephone No. 17)

A Private Asylum for Mental Cases,

TERMS FROM 3 GUINEAS PER WEEK.

(Including separate Bedrooms for all suitable cases.)

For forms of admission., &c., apply to DAVID BOWER, M.D., as above, or at 5, Duchess Street, Portland Place, W., on Tuesdays, from 4 to 5.

A vacancy for a Lady or a Gentleman.

OVERDALE,

WHITEFIELD, near Manchester.

A HOUSE licenced for the reception of 14 Ladies of unsound mind. Both Certificated and Voluntary Patients received. Acute and urgent cases can be received at any time. This is a modern house with large grounds, situated in pleasant open country, 5 miles from Manchester.—For terms apply to the Medical Superintendent. Stations: Molyneux Brow, L. & Y. Ry., ½ mile. Prestwich, L. & Y. Ry., 2 miles. Resident Medical Superintendent, PHILIP G. MOULD, M.R.C.S., L.R.C.P. Visiting Physician, GILBERT E. MOULD, L.R.C.P., M.R.C.S. Mr. P. G. MOULD attends at Winters Buildings, St. Anns St., Manchester, every Tuesday, 12 to 1.30 p.m. Tel. 7611.

WHITECROFT, CARISBROOKE,

ISLE OF WIGHT.

MENTAL PRIVATE PATIENTS of both sexes are received in connection with the Isle of Wight Asylum, situated in a beautiful part of the Island at the following charges: Men at 17s. 6d. and Ladies in a detached Home with separate grounds from 21s. per week.

Additional advantages can be arranged as desired.

For further particulars and necessary forms please apply to the Medical Superintendent.

THE RETREAT

PRIVATE ASYLUM.

Near Armagh, Ireland. ESTAB. 1824.

Licensed under Government Inspectors' supervision for the reception of Ladies and Gentlemen of the Upper and Middle Classes suffering from

MENTAL AND NERVOUS DISEASES

(Voluntary Boarders and Inebriates admitted.)

For particulars apply to the Proprietors,

Dr. J. GOWER ALLEN, J.P., and JOSEPH ALLEN, Esq.

Telegraphic Address: "*Loughgall, Armagh.*"

THE MOAT HOUSE,

Tamworth, Staffordshire.

A HOME FOR NERVOUS AND MENTAL CASES.

Stations, L. & N. West. and Mid. Railways.

The House stands in grounds of ten acres (within 5 minutes' drive of either station), and is devoted to the care and treatment of a few ladies suffering from nervous and mental disorders, who enjoy the comforts, privacy, and occupations of home life. Voluntary patients are received without certificates.

For terms, etc., apply to the Resident Proprietor, E. HOLLINS, M.A.Cantab., J.P.

MIDDLETON HALL.

MIDDLETON ST. GEORGE,

Near DARLINGTON, Co. DURHAM.

Private house for the care and treatment of ladies and gentlemen suffering from mental diseases.

This house, which is situated in a healthy and pleasant country, has been recently erected from plans approved by the Commissioners in Lunacy, and has been comfortably furnished throughout. Private rooms and special attendants are provided if required.

Terms to be had on application to L. HARRIS-LISTON, M.D., Medical Superintendent.

Barnwood House Hospital for

MENTAL DISEASES, Barnwood, Near Gloucester.

Exclusively for PRIVATE PATIENTS of the UPPER AND MIDDLE CLASSES.

This Institution is devoted to the care and treatment of persons of both sexes at moderate rates of payment.

The terms vary according to the requirements of the patients, who can have private rooms and special attendants, or be accommodated in detached villas and in the branch convalescent establishment on the hills.

Under special circumstances the rates of payment may be greatly reduced by the Committee.

For further information apply to JAMES GREIG SOUTAR, M.B., the Medical Superintendent.

COURT HALL,
KENTON, Near EXETER.

PRIVATE COUNTRY HOME for Ladies suffering from Mental Diseases.

Limited to Eight Patients.

ESTABLISHED 40 YEARS.

Resident Physician and Licensee,

BERTHA M. MULES, M.D.

Station—Starcross, G.W.R., 1½ miles.

CAMBERWELL HOUSE
33, PECKHAM ROAD, LONDON, S.E.

Telephone: No. HOP. 1037. *Telegrams:* "PSYCHOLIA, LONDON."

FOR THE CARE AND TREATMENT OF THOSE OF BOTH SEXES SUFFERING FROM NERVOUS AND MENTAL DISORDERS.

Consists of separate Houses, lit by electricity and completely modernised, standing in 20 acres of picturesque grounds, including cricket and football field, tennis court and croquet lawns. The Terrace Houses are quite separate from the rest of the Institution, and are specially adapted for the reception of mild and borderland cases, who can enter voluntarily.

The ordinary terms are 2 guineas a week. Patients can have separate sitting and bedrooms, with a special nurse, as well as the use of the general rooms, and a change to the seaside annexe at Walton-on-the-Naze.

For further particulars apply to the MEDICAL SUPERINTENDENT at the above address.

PLYMPTON HOUSE,
PLYMPTON, S. DEVON.

This old-established Licensed House offers every advantage that experience can suggest for the care and treatment of mental cases.

For terms, &c., apply to the Resident Physician,

DR. ALFRED TURNER,

Telephone, No. 2 Plympton.

BISHOPSTONE HOUSE, BEDFORD.
Telephone 0708.

Private Asylum for Ladies suffering from Mental and Nervous Disorders. The number of Patients being limited, more individual care and attention can be given to their treatment. All the surroundings are as home-like as possible. Excellent train service, one hour from London. Nurses can be sent at any time.

Terms from £3. 3s. a week, according to requirements

Resident Licensees: Mrs. PEELE and Miss KING.

Medical Officer: H. SKELDING, M.B., M.R.C.S., &c.

CHEADLE ROYAL.
HOSPITAL FOR MENTAL DISEASES,
CHEADLE, CHESHIRE.

This Hospital is in a retired part of the country, nine miles from Manchester and two miles from Cheadle and Cheadle Hulme Stations, L. & N.W. Railway and Cheshire Lines.

The object of the Institution is to provide the most efficient means for the cure of mental diseases in those who belong to the upper and middle classes of society.

Many of the patients reside outside the Hospital in villas, in no way differing from ordinary dwelling houses in their internal arrangements and general surroundings, some of them being situated in the immediate neighbourhood and some on the Welsh Coast. These establishments give considerable opportunity for change of scene and locality, and the patients are in this way benefitted in a very marked degree.

Voluntary Borders are also admitted for treatment.

Arrangements are made when desired for patients to have private rooms or villas, and their own attendants, horses and carriages.

For terms and further information apply to the Medical Superintendent, W. SCOWCROFT, M.R.C.S., &c., at Cheadle, or he may be seen at 72, Bridge Street, Manchester, on Tuesdays, from 12 to 3, and Fridays, from 2 to 3.

Telephone:
908 "Cheadle Hulme." 3594 "Manchester."

MALLING PLACE.
BEAUTIFUL SEVENOAKS DISTRICT.

Easy from Town or Coast. Both sexes, mentally unsound, received under perfect condition of treatment. Tel. and Teleg.: Adam, 2, Malling; London, 26, Harley Street.

NEWLANDS HOUSE,
TOOTING BEC ROAD, TOOTING, S.W.

A HOME licensed for the Care and Treatment of Gentlemen of Unsound Mind.

Terms from £3 3s. a week, according to the nature of the case and the accommodation required. The house stands in large grounds, and overlooks Tooting Bec Common.

For further particulars apply to H. J. HIND, M.R.C.S., &c., the Resident Medical Superintendent.

National Telephone: 524 STREATHAM.

Grove House, All Stretton,
Church Stretton, Shropshire.

A Private HOME for the care and Treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.

Proprietor, Dr. MCCLINTOCK.

Telephone— 5608 CENTRAL. *Telegraphic Address—* "ENVOY, LONDON."

ST. LUKE'S HOSPITAL FOR MENTAL DISEASES.
OLD STREET, LONDON. [200 Beds.]

(ESTABLISHED 1751.)

Admission gratuitous, or by contribution to maintenance from 15s. to 30s. per week.

CONVALESCENT HOME at Ramsgate. Voluntary Boarders (Ladies) are received at the Home without Certificates.

TRAINED NURSES immediately obtained from the Hospital for Mental, Nervous and Massage Cases.

Full particulars on application to the Secretary at the Hospital.

Glendossill and Hurst Houses

—Considerable improvements have recently been made in both these Houses. They are in every way adapted for the care and treatment of the mentally afflicted of the upper and middle classes.—Apply, S. H. AGAR, Henley-in-Arden, Medical Superintendent.

THE COPPICE, NOTTINGHAM.
HOSPITAL for MENTAL DISEASES.

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For the treatment of Neurasthenic and other Invalids. Is situated on a spur of the famed Hambleton Hills, and affords individual care to good-class patients (accommodating six cases only), with either full open-air treatment in revolving sleeping châlets, &c., or the comforts and privacy of indoor life at home. Elevation 500 feet; south aspect, sheltered situation, fine views and moorland walks, abundant sunshine, splendid air, and pure moorland water. TERMS 4 GUINEAS A WEEK. *Resident Proprietor*—H. B. LUARD, M.B.Camb., F.R.C.S.

OCKLEY SANATORIUM SURREY, nr. Leith Hill

For Ladies and Gentlemen.

Pure bracing air, very lovely country, fine views, well sheltered. Skilled nursing. Large Hall and Sleeping Châlets lately erected. Terms 2½gs. weekly. Patients received for Rest Cure, with Massage and Electricity. Opsonic Tests and Inoculation Treatment available. Res. Physician—Dr. CLARA HIND.

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KINGUSSIE INVERNESS-SHIRE.

Specially built for the Open-Air Treatment of Tuberculosis, and opened in 1901. Bracing mountain air. Elevation 860 feet above sea-level. Sheltered situation in pine wood. Graduated walks.

Electric light throughout building and in shelters.

Inoculation Treatment, controlled by opsonic estimation, available for patients—18 beds.

Resident Physician and Bacteriologist.

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SPECIALLY ADAPTED FOR OPEN-AIR TREATMENT.

elightful surroundings, overlooking the Cleveland Hills and Tees Valley.

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Telegrams: Steavenson, Middleton St. George.

THE ASHOVER SANATORIUM,

DERBYSHIRE.

600 feet above Sea Level.

For the treatment of Pulmonary Tuberculosis and other diseases. Well sheltered, pure bracing air, lovely scenery, skilled nursing. Patients received for Rest Cure and for Massage if required.

Medical Superintendent, DR. IDA E. FOX, R.M.O. (for nearly four years at the Sherwood Forest Sanatorium.)

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OPEN-AIR TREATMENT.

Sanatorium for WOMEN & GIRLS ONLY.

Terms from 30s. weekly. Restricted to 16 patients. Lighted by Electricity throughout. Med. Officer: Miss MARY R. MCDOUGALL, M.B., C.M.

Rest cases taken.

Address SECRETARY, "Woodhurst," Dorking, Surrey.

AN EAST ANGLIAN HOME OF REST

for those who by reason of recent illness or the stress and worry of town life need rest and change, under natural conditions, to restore them to normal health. A doctor after 25 years' practice in London, has purchased a farm of over 200 acres and provided accommodation for about 20 patients. Bracing air, recreations of all kinds, with exceptional opportunities for outdoor occupation under medical supervision.—Full particulars from DR. WHEELER, Hinderclay, Diss.

BRUNTON HOUSE, LANCASTER

A Private Home for Backward Boys.

There are now a few vacancies in this commodious and well-appointed private establishment. It is easily accessible from Lancaster, overlooking Morecambe Bay, the Lake Mountains, and possessing extensive gardens and grounds, which include tennis and croquet lawns. Individual attention given to the pupils by experienced staff, under a Resident Physician and Lady Matron. Terms, &c., on application to Dr. ARCHIBALD R. DOUGLAS.

DIPLOMA IN PUBLIC HEALTH.

King's College, London.

DEPARTMENT OF HYGIENE AND PUBLIC HEALTH.

HYGIENE AND SANITARY LAW.—Professor W. J. SIMPSON, M.D., D.P.H.

BACTERIOLOGY.—Professor HEWLETT, M.D., D.P.H.

CHEMISTRY AND PHYSICS.—D. SOMMERVILLE, M.D., D.P.H.

The Laboratories are open daily for instruction and research. Special arrangements are made to suit the convenience of those engaged in practice. Short courses may be arranged by those who do not require to take the full course.

Weekly demonstrations are given on Sanitary appliances, and excursions are made to places of interest.

Classes are held in Sanitary Law and Vital Statistics.

For particulars apply to the Secretary, or personally at the Laboratory.

CLINICAL PATHOLOGY AND BACTERIOLOGY VACATION COURSE.

King's College, London.

A Vacation Course in CLINICAL PATHOLOGY AND BACTERIOLOGY will be held from July 19th to 30th.

For particulars apply to Prof. HEWLETT or the Secretary.

INDIAN MEDICAL SERVICE.

INDIA OFFICE, LONDON,
May, 1909.

An examination for not less than 21 Commissions in His Majesty's Indian Medical Service will be held in London on Monday, 26th July, 1909, and the five following days. Particulars regarding pay, promotion, &c., in the Service and the necessary forms for application can be obtained from the Military Secretary, India Office, London, S.W. The applications, duly filled up and accompanied by the required certificates, must reach the India Office on or before the 13th July, 1909.

O'M. CREAGH, General,
Military Secretary.

Guy's Hospital Prelim.

SCIENTIFIC (M.B.London). — The next Course of Lectures and Practical Classes for this Examination will begin on October 1st. — Full particulars may be obtained on application to the DEAN, Guy's Hospital, London Bridge, S.E.

FINAL EXAMINATIONS.

Coaching orally or by correspondence by M.A., M.B., B.C.Cantab., and F.R.C.S.Eng., of much experience, and on the Staffs of London Hospitals.

Microscope and museum work, Anatomy with demonstrations, and all final subjects.—Address No. 873, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Medico-Psychological

ASSOCIATION OF GREAT BRITAIN AND IRELAND.

EXAMINATION FOR CERTIFICATE IN PSYCHOLOGICAL MEDICINE AND GASKELL PRIZE.

The next Examination will be held on July 19th and 20th.

For particulars apply to Dr. MILLER, Registrar, Hatton Asylum, Warwick.

Birchington-on-Sea. — Home

SCHOOL FOR GIRLS, Principals (daughters of medical man) offer special terms for the daughters of medical men. Excellent air, highly recommended for children suffering from glands and adenoids. Health Exercises, Gymnastics, outdoor games, etc. South aspect. Close to sea and station.—Address, "Portpool," Birchington.

Coaching in Medicine and

allied subjects for all exams., including Hospital Clinical teaching and Museum work, privately or in small classes by an M.D., M.R.C.P. (Lond.), and F.R.C.S.Eng., Physician at two London Hospitals. Correspondence tuition if required. Army promotion, &c.—Address, "Facilis," BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

F.R.C.S. (Edin.)

Tutorial Classes for above Examination.

C. R. WHITTAKER, F.R.C.S.:—
"Surgical Anatomy and Operative Surgery."

ARCHD. MCKENDRICK, F.R.C.S.:—
"Surgery, and Surgical Pathology."

Tuition also by correspondence.

Full particulars from Dr. A. MCKENDRICK, 27, Chalmers Street, Edinburgh

The London School of Tropical

MEDICINE (under the auspices of His Majesty's Government), Connaught Road, Albert Dock, E. In connection with the Hospitals of the Seamen's Hospital Society.

SESSIONS COMMENCE 1st Oct., 15th Jan., and 1st May.—For prospectus, syllabus, and other particulars apply to the Secretary, P. MICHELLI C.M.G., Seamen's Hospital, Greenwich, S.E.

Oxford University.

DEPARTMENT OF OPHTHALMOLOGY.

The Post-Graduate Course this year will be held from July 5th to 17th.

Particulars from R. W. DOYNE, 30, Cavendish Square, London, W.

FELLOWSHIPS.

The Special Class for the FELLOWSHIP EXAMINATION of the Royal College of Surgeons, Edinburgh, in September, will commence on Thursday, 19th August. Correspondence should be commenced at once.—Particulars from Dr. KNIGHT, 7, Chambers Street, Edinburgh.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

Lectures, Cliniques and Special Practical Classes. Annual Subscription One Guinea

Particulars from Secretary, 22, Chenies Street, Gower Street, W.C.

INFORMATION AND ADVICE AS TO SCHOOLS

for BOYS or GIRLS, at home or abroad, and as to Tutors for all Examinations may be obtained (free of charge), by applying to the Scholastic Manager, **Scholastic, Clerical and Medical Association Ltd., 22, Craven Street, Strand, W.C.**

D.P.H. M.D. Thesis.

Postal and Oral Tuition. Private Laboratory.

Address—Dr. HUGH JONES, Grove Street, Liverpool.

EDINBURGH POST-GRADUATE VACATION COURSE IN MEDICINE

In connection with the University and Royal Colleges.

THE Course, which will extend from **30th August to 25th September, 1909,** will comprise—

A GENERAL COURSE (divisible if desired into two independent fortnights), including Medical and Surgical Clinics and Ward Visits, Medical Applied Anatomy, Clinical Courses in Neurology, Diseases of the Skin, Eye, Ear, Nose, and Throat, Diseases of Children and Fevers, and Practical Courses on the Blood, Bacteriology, Morbid Anatomy, &c. In addition, a series of Daily Special Lectures will be given by leading Members of the Edinburgh School.

A SURGICAL COURSE, which will include Operative Surgery, Surgical Applied Anatomy, Surgical Pathology, X-Rays applied to Surgery, and Surgical Clinics.

A series of Classes on Methods of Examination and Diagnosis will be held from the 2nd to the 27th of August.

A Syllabus containing all particulars may be obtained from THE SECRETARY, UNIVERSITY NEW BUILDINGS, EDINBURGH.

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL,

SECOND AVENUE AND TWENTIETH STREET.

Oldest established and leading School for Practitioners. Teaching almost wholly clinical and personal, or in small groups. Every modern teaching facility. 225 beds in the Hospital; 350 Outpatients daily. Continuous Courses for the general practitioner, and others adapted to the specialist in every department of medicine and surgery. Unusual and advanced work readily arranged for. The Sessions continue throughout the year, and may be entered at any time, and for varying periods.

For full information address GEORGE GRAY WARD, Jr., M.D., Secretary of the Faculty.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

SPECIAL POST-GRADUATE VACATION COURSE—1909.

A **COURSE OF INSTRUCTION** for Qualified Practitioners will be given during the **SUMMER VACATION** from July 12th to July 31st inclusive.

THE COURSE will include attendance on the **HOSPITAL PRACTICE** and in the various **SPECIAL DEPARTMENTS,** as well as Special Medical and Surgical **WARD CLINICS** and **SPECIAL DEMONSTRATIONS** on Diseases of the Blood, Gastric Methods, Diabetes, Electrical and X-Ray Work, Clinical Applied Anatomy, Neurology, Diseases of the Eye, Diseases of the Ear, Diseases of the Throat and Nose, Diseases of Children, Diseases of the Skin, Orthopædics, and Asylum Demonstration.

There will be, also, a Course of laboratory work in **PRACTICAL BACTERIOLOGY.**

For a **SYLLABUS** with further information apply to **THE DEAN,** St. Bartholomew's Hospital, London, E.C.

PRIVATE MEDICAL COACHING.

EXPERIENCED MEDICAL TUTOR—London Graduate and Gold Medallist—arranges coaching for all medical examinations. Oral or Correspondence work according to requirements. **A speciality is made of coaching for L.S.A. and Conjoint Exams.** Also Edinburgh Triple.—Address TUTOR, No. 200, BRIT. MED. JOURNAL Office, 429, Strand, W.C.

St. Mary's Hospital Medical

SCHOOL, Paddington, W.
(University of London.)

The WINTER SESSION will begin on October 1st.

The Medical School provides courses of instruction covering the ENTIRE MEDICAL CURRICULUM for the Degrees of the Universities, and for the Diplomas of M.R.C.S., L.R.C.P. All Courses are recognised by the University of London for Internal Students.

SIX ENTRANCE SCHOLARSHIPS, value £145 to £25, competed for on September 20th–22nd.

Illustrated Handbook on application to the DEAN.

St. Mary's Hospital Medical

SCHOOL, Paddington, W.
PRELIMINARY SCIENTIFIC COURSE.

The Medical School provides a complete Course of Chemistry, Physics, and Biology under Recognised Teachers of the University of London, commencing on October 1st.

Time Table and particulars on application.

D.P.H.

EDINBURGH CLASSES.

A Complete Course of Instruction in PRACTICAL CHEMISTRY, BACTERIOLOGY and OUTDOOR SANITARY WORK which qualifies for Edinburgh, Cambridge, Glasgow or Dublin.

Full information and advice from Mr. G. H. GEMMELL, F.I.C., F.C.S., Chemical Laboratory, School of Medicine, 4, Lindsay Place, Edinburgh.

North-East London

POST-GRADUATE COLLEGE
PRINCE OF WALES'S GENERAL HOSPITAL
TOTTENHAM, N.

The practice of the Hospital is limited to medical practitioners. Practical classes in clinical subjects, including Bacteriology, are arranged. The Fee for one month, is 2, for 3 months, 3, and for a perpetual ticket 5 guineas. A Vacation Course will be held from Sept. 6th to 18th. Fee 2 guineas. Prospectus, &c., may be obtained from A. J. WHITING, M.D., Dean.

London Inter-Collegiate

SCHOLARSHIPS BOARD.

EXAMINATIONS for ENTRANCE SCHOLARSHIPS at University College, King's College, King's College Hospital, St. George's Hospital, Westminster Hospital, and the London School of Medicine for Women will be held on September 21st, 1909. Applications must be sent in by 14th September, to

A. E. G. ATTOE,
University College, Gower Street, London, W.C.

EARLEYWOOD PREPARATORY SCHOOL, ASCOT.

The New Wing will be opened in September, when there will be a limited number of vacancies. Preparation for the Public Schools Entrance Examinations and Scholarships and for Osborne.—For particulars apply to the Principals—Miss SANDWITH; MONTAGUE PITKIN, M.A.Camb., M.R.C.S., L.R.C.P.

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London University Matriculation. *Medical Preliminaries.* Previous and Responsions. Scholarships. Conjoint Examinations. Classes (small) and private tuition all examinations. Vacation Tuition.

Apply for prospectus to the SECRETARY, Carlyon College, 55, Chancery Lane, London.

London University Successes, 460; Medical Prelim., 290; Hospital Scholarships, 10; Other Successes, 430; Previous and Responsions, 80.

EDUCATION.-DAUGHTERS

of Medical men special terms. Excellent School. Residential Pupils only. Illustrated Prospectus from PRINCIPAL, MARLBOROUGH COLLEGE, BUXTON, DERBYSHIRE.

POSTGRADUATE COLLEGE,

WEST LONDON HOSPITAL, HAMMERSMITH, W.

The Hospital Practice is reserved exclusively for Post-graduates, and a Reading and Writing Room, in addition to a Lecture-room, is provided for them. A special class in Bacteriology is held each month. Prospectus with full particulars will be sent on application to

L. A. BIDWELL, Dean.

DIPLOMA in PUBLIC HEALTH.
UNIVERSITY OF CAMBRIDGE.

Lectures and Practical Instruction in the subjects required will begin on the 22nd June and 14th October, 1909, at the University Laboratories, Downing Street, Cambridge.

Hygiene.—Dr. ANNINGSON.

Practical Sanitary Administration.—Dr. ANNINGSON and the M.O.H. of Cambridge.

Bacteriology and Preventive Medicine. — Dr. GRAHAM-SMITH.

Chemistry and Physics.—Mr. J. E. PURVIS, M.A.

Animal Parasites.—Mr. E. A. SHIPLEY, M.A., F.R.S.

Further particulars may be obtained from the above Lecturers at the University Laboratories, or from Dr. Anningson, Walthamsal, Barton Road, Cambridge.

West End Hospital for
DISEASES of the NERVOUS SYSTEM, 73, Welbeck Street, London, W.

CLINICAL DEMONSTRATIONS for Practitioners and Senior Students are given by the Physicians on the undermentioned days:—

Mondays	at 3 p.m.,	Dr. HARRY CAMPBELL.
Tuesdays	,, 5.30 p.m.,	Dr. JAMES MACKENZIE.
Wednesdays	,, 3 p.m.,	Dr. F. PALMER.
Thursdays	,, 3 p.m.,	Dr. T. D. SAVILL.
Fridays	,, 2 p.m.,	Dr. PURVES STEWART.
	,, 5.30 p.m.,	Dr. E. D. MACNAMARA.

POST-GRADUATE STUDY.

London School of Clinical
MEDICINE.

For Qualified Practitioners only.

At the SEAMEN'S HOSPITAL (Dreadnought, Greenwich), to which are affiliated for teaching purposes the following Hospitals:—

WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.
GENERAL LYING-IN HOSPITAL, York Road.
BETHLEM HOSPITAL.

THREE SESSIONS ANNUALLY commencing 15th January, 1st May, and 1st October.

Classes in OPERATIVE SURGERY can be formed at any time. Courses of one month only may be taken in Clinical work.

For further particulars and complete Syllabus apply to C. C. CHOYCE, Dean.

Royal Westminster Ophthal-
MIC HOSPITAL, Charing Cross, W.C.

SUMMER SESSION.

The Hospital is open daily for Clinical Work and Instruction from 1.15 p.m.

The following CLASSES will be held during the Session on the days stated at 4.30 p.m., commencing on Monday, 24th May.

Mondays.—*Refraction.* Mr. Hartridge.
Tuesdays.—*Lantern Lectures on the Fundus.* Mr. Roll.
Wednesdays. — *Clinical Demonstrations.* Mr. Dodd.
Thursdays.—*Pathology of the Eye.* Mr. Brewerton.
Fridays. — *Methods of Examination.* Mr. McMullen.

A Class in Operative Surgery will be held by Mr. Grimsdale at times to be arranged.

Instruction in Practical Pathology will be given by the Pathologist.

Clinical Evenings: June 8th and July 6th, at 8 p.m.

Fees, inclusive of all Classes except Operative Surgery and Practical Pathology: Six months, £3 3s.; perpetual, £5 5s.

For further particulars apply to Mr. MCMULLEN.

LONDON THROAT HOSPITAL
FOR
DISEASES of the THROAT, NOSE, AND EAR
204, Great Portland Street, W.

PRACTICAL DEMONSTRATIONS AND INSTRUCTION daily, at 2 p.m., Tuesdays and Fridays at 6.30 p.m. Operations 9.30 a.m.

Fees for attending the Practice of the hospital—One month, 1 guinea; three months, 2 guineas.

For particulars apply to W. H. KELSON, F.R.C.S Hon. Sec. Medical Committee.

M.D. DURH. (PRACTITIONERS) EXAMINATION.

Dr. D. WELLS PATTERSON coaches in all the Professional subjects of the above Examination both by correspondence and also by oral tuition in Newcastle. Four of the six gentlemen who received the degree on April 3rd were coached by Dr. PATTERSON. The oral tuition for the July Exam. commences on June 30th. Correspondence coaching can be commenced at any time.—For all particulars apply, Dr. D. WELLS PATTERSON, 26, Ellison Place, NEWCASTLE-ON-TYNE.

City of London Lying-In
HOSPITAL and MIDWIFERY SCHOOL.
City Road, E.C.

MEDICAL PUPILS admitted to the Practice of the Hospital. Every opportunity afforded of seeing obstetrical complications and operative midwifery.

Certificates awarded as required by the various examining bodies.

Pupils trained for Midwives and Monthly Nurses. Special preparation for examination of Central Midwives Board.

For rules, fees, &c., apply,
R. A. OWTHWAITE, Secretary.

M.D. (STATE MED.) & D.P.H.

M.D., B.Sc., D.P.H., (Lond. and Camb.) prepares Candidates for the M.D.Lond. and all other D.P.H., Examinations in:—

(1) **THEORY** (including Mathematics).
(2) **PRACTICAL WORK** { Chemistry / Bacteriology }
(Private Laboratory.)

10 years' experience. **RESULTS:** Highest % of passes. M.D.(Lond.) all successful.—Apply by letter to No. 600, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

S. Dunstan's Abbey School,
Plymouth. Conducted by the Sisters of the Community of S. Mary the Virgin, Wantage. (Church of England). 30 boarders. Sole charge of children whose parents are abroad. Mild climate. Sea bathing. Illustrated prospectus. — Apply, SISTER-IN-CHARGE.

Triple Qualification, Edin-
burgh.—Special preparation in class, privately and by correspondence for these examinations. Also for Fellowship examinations of the Royal College of Surgeons, Edinburgh, and M.D. Brussels. Resident Pupils received.—Address, Class Room, 7, Chambers Street, Edinburgh

UNIVERSITY EXAMINATION POSTAL INSTITUTION.

17, RED LION SQUARE, LONDON, W.C.
(Late 27, Southampton Street, Strand.)
16 Medical Tutors, including 9 Gold Medallists.

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M.D.(Lond.) 1901-8; including 8 Gold Medallists. **129**

M.S.(Lond.) Gold Medal 4 times obtained.

M.B., B.S.(Lond.), 1906-9 **35**

Intermediate M.B. (Lond.): 19

D.P.H. 1906-9 - - **44**

M.D.Dur. (Practitioners) 1900-9: 28

F.R.C.S. (Eng., Edin., and Ireland): 22.

Primary F.R.C.S. (Eng.), during 1907-9 - - - **15**

R.A.M.C.Entrance. 5 entered 1908-9 all successful.

Promotion, 1906-9; all 21 successful.

Conjoint Final: 1906-9, 18, &c., &c.

ORAL REVISION CLASSES
to begin in June.

M.D.Durham.	I.M.S.
D.P.H.	M.R.C.P.(Edin.).
R.A.M.C.	F.R.C.S.(Edin.).

EPSOM COLLEGE.

(Established in 1855 as a Public School with a Royal Medical Foundation.)

At the ANNUAL GENERAL MEETING held this day at the office in Soho Square, the following Candidates for Pensionerships and for Foundation Scholarships were reported by the Scrutineers, Dr. Charles Drage, Dr. Clement Godson, and Mr. W. A. Propert, to have obtained the largest number of votes, and were declared to have been duly elected:—

PENSIONERSHIPS.

1. Devlin, Jane	6896
2. Slesser, Catharine ...	6288
3. Barron, Emily	5234
4. Mitchell, Joan	4567

FOUNDATION SCHOLARSHIPS.

1. Corby, Thomas R. B.	8864
2. Wreford, Oswald H. V.	8050
3. Hartnett, Laurence J.	7437
4. Fuller, Norman W.	7115
5. Christie, Donald F.	7091
6. Corry, Daryll C.	6816
7. Weatherly, Edward F. C. F. ...	5897

J. BERNARD LAMB, Secretary.
37, Soho Square, W.
June 25th, 1909.

EPSOM COLLEGE.

(Established in 1855 as a Public School with a Royal Medical Foundation.)

An election to a FEMALE SCHOLARSHIP, providing free education and maintenance at the School of St. Anne's Society, in connexion with this College, will shortly take place. Candidates must be between the ages of 7 and 12, and must be necessitous orphan daughters of duly qualified medical men who have been for not less than five years in independent practice in England or Wales.

Forms of application can be obtained at the Office, 37, Soho Square, W., which must be sent in not later than the morning of Friday, 16th July.

J. BERNARD LAMB,
22nd June, 1909. Secretary.

Epsom College.—Special
terms for Sons of Medical Men.—The new MARKHAM SKERRITT PHYSICAL AND BIOLOGICAL LABORATORIES are now open. The full Preliminary Scientific Examination of the London University can be taken at the College, and valuable Hospital Scholarships are awarded annually. A few vacancies only remain for September next.—Apply The Bursar, Epsom College, Epsom.

Switzerland.—Horticulture for
GIRLS.—Unique English school in Switzerland, interesting outdoor life. Specially adapted for delicate girls. Principal with Hosp. & Hort. training. Culture of fruit, flowers, vegetables. Care of poultry, &c. Elevated position. Bracing air. Perfect sanitary arrangements. — For particulars apply, Principal, Chateau Châtelaine, Route de Lyon 115, Geneva.

Schools.—Addresses and
reliable information (gratis). Some few (good) offer special terms to medical men Particulars: THE BRITISH AND FOREIGN SCHOOLS AGENCY, King Street, Manchester. (Say if girl or boy, and age.)

Society for Relief of Widows
AND ORPHANS OF MEDICAL MEN.
Founded 1788.

INCORPORATED BY ROYAL CHARTER, 1864.

The Members are reminded that a QUARTERLY COURT of DIRECTORS will be held on Wednesday, July 14th. Candidates for admission into the Society desirous of being ballotted for at the meeting must send their forms of proposal to the Secretary on or before June 24th. The forms of proposal may be obtained from the Secretary. The benefits of the Society are restricted to the families of deceased Members of not less than three years standing. Only registered Medical Practitioners resident within a radius of twenty miles from Charing Cross are eligible for election as Members. The Secretary attends at the office every Wednesday and Friday, from 4 to 5 o'clock.

E. J. BLACKETT, Secretary.
11, Chandos Street, Cavendish Square, W.
June 21, 1909.

University of Leeds.

FACULTY OF MEDICINE.

DEMONSTRATOR OF PHYSIOLOGY in the School of Medicine. Salary £150 per annum. For information apply to the REGISTRAR of the University.

University of Manchester.

Applications are invited for the post of JUNIOR DEMONSTRATOR IN PHYSIOLOGY. The stipend is £100, rising to £150 per annum. Applications should be sent on or before Wednesday, the 14th July to the REGISTRAR, from whom further particulars can be obtained.

London Hospital Medical COLLEGE.
(University of London).

ASSSISTANT DEMONSTRATOR OF ANATOMY.

There is a vacancy for an Assistant Demonstrator of Anatomy.

The Assistant Demonstrators are required to attend daily for four hours.

Salary £90 a year. Applications, with copies of testimonials, to be sent in by July 10th to the undersigned, from whom further particulars may be obtained.

MUNRO SCOTT, Warden.

Turner Street, Mile End, E.

Royal College of Physicians OF LONDON.

The next PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Tuesday, July 20th.

Candidates are required to give fourteen days' notice in writing to the Registrar of the College, with whom all certificates and testimonials required by the by-laws are to be left at the same time.

EDWARD LIVEING, M.D., Registrar.

Pall Mall East, S.W.

University of Aberdeen.

APPOINTMENT OF EXAMINERS.

The University Court at its ordinary meeting in July, will proceed to appoint additional Examiners in:—

(1) Anatomy.
(2) Physiology.

Applications, with 18 copies of testimonials (should the candidate think fit to submit any), should be lodged with the Secretary on or before Wednesday, 7th July.

DONALDSON ROSE THOM,
Secretary of the University.

23rd June, 1909.

University of Edinburgh.

CHAIR OF SURGERY.

The CURATORS of PATRONAGE of the University of Edinburgh will on a date to be afterwards fixed proceed to the Election of a Professor of Surgery in room of Professor John Chiene, C.B., whose resignation of the Chair has been accepted as from 31st August next.

Each candidate for the Chair is requested to lodge with the undersigned not later than Thursday, 15th July next, eight copies of his application and eight copies of any testimonials which he may desire to submit. One copy of the application should be signed.

R. HERBERT JOHNSTON, W.S., Secretary.

4, Albyn Place, Edinburgh, 21st June, 1909.

Egyptian Government.

MINISTRY OF EDUCATION.

The post of PROFESSOR of ANATOMY at the School of Medicine, Cairo, will become vacant in September next. The pay of the Professor of Anatomy is £800. No private Practice allowed, but the Professor will have pension rights. A Circular containing further particulars may be seen at the Offices of the Universities and Medical Schools. The Director of the School of Medicine will arrange for interviews in London with selected candidates.

Every applicant must be a qualified and registered medical man, and must have had experience in the teaching of Anatomy.

Applications, together with *copies* of testimonials (which will not be returned), must reach London by July 6th. Every applicant must send in statements as to (*a*) his age, (*b*) his medical qualifications, (*c*) his previous experience as a teacher of Anatomy, (*d*) his publications. The selected candidate must pass as a first class life before the Egyptian Government Medical Board in London, and must be prepared to arrive in Cairo by the end of September.

Applications to be addressed to "The Director, Egyptian Government School of Medicine, c/o the Director, Imperial Institute, South Kensington, London, S.W."

London Throat Hospital,
204, Great Portland Street, W.

ASSISTANT ANÆSTHETIST wanted. Apply SECRETARY.

St. Mary's Hospitals for WOMEN AND CHILDREN, Manchester.

Wanted, a HOUSE SURGEON, who will be required to fulfil such duties as are laid down in the bye-laws. The appointment is for six months from the 1st July next, with honorarium of £25 and board and residence. Applications, with copies of testimonials (not more than six in number), to be sent to the undersigned without delay.

By order, R. RATCLIFFE, Secretary.

Medical Appointments:

"Medicals" seeking appointments are advised to communicate with Messrs. R. ANDERSON & SON, 11, Chambers Street, Edinburgh, who for many years have made a special feature of the printing of Testimonials, Qualifications, and Applications for all grades of posts.

Newport and Monmouthshire HOSPITAL. (100 Beds.)

Wanted THIRD RESIDENT MEDICAL OFFICER to undertake duties of Casualty Officer. Registered Medical and Surgical qualifications. The Hospital has an Out-patient Department. Salary £60 per annum, with board, residence, and laundry (no stimulants provided). The appointment is for not more than six months, and subject to the duties being performed satisfactory by the successful candidate, he will, at the end of his term of office, be elected House Physician, and later, House Surgeon; both of these offices to be held for a period not exceeding six months.

Applications, stating age and qualifications, together with copies of recent testimonials, to be sent to the Secretary-Superintendent.

Applications from ladies not entertained, as there is no accommodation.

J. K. MILLWARD,
Newport, Mon. Secretary-Superintendent.

Queen Charlotte's Lying-in HOSPITAL, Marylebone Road, N.W.

RESIDENT MEDICAL OFFICER for Out-patient Department required. He must be registered. The appointment is for four months. The salary is at the rate of £60 per annum, with board, residence and washing. Applications, with copies (not originals) of not more than three testimonials, will be received by the Secretary up to 6th July. Canvassing is prohibited. Duties to commence on 1st August.

By order,
ARTHUR WATTS, Secretary.

Wanted, for the Chesterfield AND NORTH DERBYSHIRE HOSPITAL,

a Gentleman to fill the office of JUNIOR HOUSE SURGEON, who shall have charge of the majority of the medical beds. He must be fully qualified and registered. Salary £60 a year, with board, apartments, and laundry. The office may be terminated by one month's notice on either side.

Applications, with copies of testimonials, must be in the hands of the Secretary by 28th June, 1909. The accepted candidate will be expected to enter upon his duties immediately.

W. THRAVES, Secretary.

14th June, 1909.

Derbyshire Royal Infirmary, Derby.

The Elective Committee are prepared to receive applications for the post of ASSISTANT HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Act.

The appointment will be tenable until 1st February, 1910, with a possibility of extension by the Weekly Board for a further period of six months. The salary is at the rate of £50 per annum, with board, residence, and washing.

Applications, with copies of not more than five testimonials, to be received not later than 9 a.m. on Wednesday, 7th July.

By order. EDMUND FORSTER,
Superintendent.

Royal Infirmary, Derby.
June 25th, 1909.

Westminster Hospital, (opposite Westminster Abbey).

There is a vacancy in the office of ASSISTANT HOUSE PHYSICIAN. The appointment is for two months, non-resident, but board provided, to be followed by six months as House Physician, with board and lodging in the Hospital. Candidates must be registered male Medical Practitioners, and applications should be sent to the undersigned. SIDNEY M. QUENNELL, Secretary.

Monkwearmouth and SOUTHWICH HOSPITAL, Sunderland.

HOUSE SURGEON wanted. Salary £100 per annum, with board, lodging and laundry.

Candidates, who must be duly qualified, and registered, are requested to send in their applications with copies of testimonials to the Secretary, on or before the 24th July, 1909.

H. W. FILKIN, Secretary

Canterbury Borough Asylum, Canterbury.

An ASSISTANT MEDICAL OFFICER wanted (male). Age under 30, single.

Salary to commence at £140 per annum, with board, lodging, washing, and attendance. Apply, with copies of three recent testimonials, to the MEDICAL SUPERINTENDENT.

King's Norton Union.

MEDICAL OFFICER OF WORKHOUSE AND INFIRMARY.

The Guardians of the Poor of the King's Norton Union invite applications for the office of Medical Officer at the Workhouse and Infirmary situate at Selly Oak, near Birmingham.

Candidates must be duly registered under the Medical Acts, and qualified to practise both Medicine and Surgery in England and Wales, and be prepared to commence duty not later than the first day of September, 1909.

The Workhouse has accommodation for 600 inmates, and the Infirmary, which is administered under a special Order of the Local Government Board, and is on a site adjoining the Workhouse, has accommodation for nearly 500 inmates.

The duties of the office are those prescribed by the Local Government Board, together with such other duties as the Guardians may from time to time prescribe.

The salary is £400 per annum, inclusive of all allowances in lieu of furnished residence and rations.

The gentleman appointed must devote the whole of his time to the services of the Guardians, and must reside near the Infirmary in premises to be approved of by the Guardians.

The appointment will be for one year, renewable by the Guardians for a second year at a similar salary, and is subject to the consent of the Local Government Board.

Applications, stating age, qualifications, and experience, accompanied by copies of three recent testimonials, must reach me not later than the 30th day of June, 1909.

Canvassing the Guardians is prohibited, and will be deemed a disqualification.

R. J. CURTIS.
Clerk to the Guardians.

Guildhall Buildings,
Stephenson Street, Birmingham.

Sheffield Union Hospital.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians of the Poor of the Sheffield Union invite applications from medical gentlemen for the appointment of Resident Assistant Medical Officer at the Union Hospital, Firvale, Sheffield (500 beds), which is administered separately from the Workhouse under an Order of the Local Government Board. The Hospital is equipped in accordance with modern requirements, and facilities are provided for Pathological and Bacteriological work. Salary £100 per annum, with apartments, rations, and the other usual allowances. Applicants must be single, and must be duly registered under the Medical Acts, and qualified by law to practise medicine and surgery in England and Wales, and the gentleman appointed will be required to produce his licence, diplomas, or certificates to the Guardians. The appointment will be subject to the provisions of the Poor Law Officers' Superannuation Act, 1896.

Such medical gentlemen as desire to offer their services are requested to send to the undersigned a letter of application, stating age, qualifications, and previous experience, together with copies of testimonials of recent date as to professional ability and personal character. Applications must be delivered at or before noon on Thursday, the 1st July, 1909.

By order of the Guardians,
ALBERT EDWD. BOOKER,
Clerk to the Guardians.

Union Offices, Westbar, Sheffield,
8th June, 1909.

Wolverhampton and Midland COUNTIES EYE INFIRMARY.

Wanted, a HOUSE SURGEON, accustomed to administer Anæsthetics. Candidates with a knowledge of Refraction preferred.

There are 40 beds for In-patients and a large Out-patient department.

Terms £80 per annum, with furnished apartments, board, and laundry.

Gentlemen desirous of becoming candidates must send their applications, with copies of recent testimonials (not more than five), so as to reach the Assistant Secretary by first post on Tuesday, the 29th of June. Duties to commence about the middle of July next.

By order,
EUSTACE LEES,
Wolverhampton. Assistant Secretary.

Worcester General Infirmary.

The office of HOUSE PHYSICIAN is vacant. Gentlemen wishing to offer themselves as candidates are requested to send copies of recent testimonials (not more than four), addressed to the Secretary, as soon as possible. Candidates must possess a medical and surgical qualification, and be registered under the Medical Act. Salary £100 per annum, with board, residence and washing.

A personal canvass of the Committee is prohibited.

By order of the Executive Committee.
WILLIAM STALLARD, Secretary.
Worcester Chambers, Pierpoint Street, Worcester.
21st June, 1909.

Wanted, at once, outdoor unmarried ASSISTANT in one of the better Lancashire towns. Dispenser kept. Usual duties and bond. Must be energetic, well qualified, and experienced. Late H.S. preferred. Salary £200. —Address, stating age, height, qualifications and experience, and enclosing photograph and references, No. 3211, BRIT. MED. JOUR. Office, 429, Strand, W.C.

Wanted qualified outdoor ASSISTANT for Branch Practice in small country town. House provided. Must be able to cycle and drive, and furnish recent references.—Address, stating age, salary required, and enclosing photo, No. 3212, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted, outdoor Assistant- SHIP. Rooms and attendance or house. Age 36; M.B., C.M.Edin. Experience in general practice. Married. Highest references. Cyclist. £2 0.—Address No. 3273, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted, at once, an outdoor unmarried ASSISTANT. Must have held Hospital appointments and possess a degree. A dispenser is kept and there are no clubs or Parish.—Apply, COLBY SHARPIN, Bedford.

Wanted, for a good-class Private Sanatorium an ASSISTANT, with a view to Partnership. Preference given to one who has personal experience of Nordrach treatment.—Address, No. 3241, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted, outdoor Assistant in small country town, agricultural district, Yorks. Suit a young newly qualified sociable man fond of tennis, golf, &c. Principal a man of 35. London degree. — Address, No. 3243, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted at once, indoor ASSISTANT. Salary £150. — Address, stating age and references to No. 3231, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted, in Glamorganshire, ASSISTANT. Salary £200, with rooms and attendance. Usual bond.—Address, stating age, qualifications and references, No. 2929, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted Assistantship in a Branch Practice. Age 45. Single.—Address, No. 3258, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted outdoor Assistant to visit, dispense, and keep books.—Apply, Dr. WALLACE, Howard Lodge, Cardiff.

Wanted a Locum for a fortnight beginning of August. Mixed Practice, club and private. Very little midwifery or night work. Horse kept. — Address, with references, No. 3203, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted at once Management of BRANCH Practice, or good outdoor Assistantship. Advertiser is M.B., Ch.B., and experienced in general Practice. Ophthalmology, Refraction, and Anæsthetics. Well equipped with instruments. Excellent references. Unfurnished house required. — Address, No. 3236, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Assistants wanted. — (1) Norfolk, £144 in; (2) Dorset, £130 in; (3) Lancs., £200 out; (4) Notts., £180 out; (5) Worcestershire, £175 and house; (6) Glam., £200 out; (7) Co. Durham, £140 in; (8) Beds, £200 out, unmarried man wanted.—Apply to the SCHOLASTIC, CLERICAL AND MEDICAL ASSOCIATION, Ltd., 22, Craven Street, Trafalgar Square, W.C.

Assistant wanted, well qualified. German and French essential. View to succession. Good class West End Practice. Chiefly consulting room. About £1,500 a year. State particulars. — Address, No. 3087, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Messrs. R. Sumner & Co., Ltd., 50A, Lord Street, Liverpool, have on their books several very desirable ASSISTANTSHIPS, of which they would be pleased to give particulars to gentlemen applying with their references.

Locum Tenens and Assistants. Wanted MEDICAL MEN, aged 25 to 35 or 40, with good references, for work as above.—Apply immediately to the SCHOLASTIC, CLERICAL, AND MEDICAL ASSOCIATION, Ltd., 22, Craven Street, Trafalgar Square, W.C. No registration fees.

Locum Tenens.—No fee to principals. Mr. PERCIVAL TURNER has a large staff of trustworthy gentlemen acting as Locum Tenens and will be happy to send them at short notice on application. Fees from £4 4s. a week.—Address, 4, Adam Street, Adelphi, London, W.C. Telegrams, "Epsomian," London. Telephone, Central, 3399.

Locum Tenens, M.R.C.S., L.R.C.P., is prepared to make engagements from now to October. Four guineas a week and third return from Exeter. Abstainer. References if required. Twelve years' experience in practice Cycles.—Address, 2344, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Locum Tenens.—No fees to Principals. Messrs. H. WHYTE & CO., have a large number of reliable gentlemen acting as Locum Tenens, and will be happy to send them at a few hours notice. Fees from £4 4s. per week.—Address, 10, Duke Street, Adelphi, London, W.C. Telephone 10680 Central.

Locum Tenens. — Doubly qualified, experienced and well received by all classes. Age 40. Will be disengaged June 26th till July 6th. Four guineas and 2nd return from London. —Address, "Locum," c/o Dr. ABBOTT, Aston Manor, Birmingham, till noon June 26th, afterwards "Locum," Newnham Fields, Willey near Lutterworth.

Locum Tenens now disengaged until July 21st, experienced, absolutely reliable, and well received by patients. Highest recent references. Drive and cycle. Terms four guineas and third return Newcastle-on-Tyne.—Address, "Surgeon," 76, Ilfracombe Gardens, Monkseaton, Northumberland.

Locum Tenens, fully qualified and experienced, disengaged June 30th. Advertiser is an abstainer, and can furnish highest references.—Address, "E. R. P." c/o Dr. CRAIG, Rosehill, Willington-on-Tyne, Northumberland

Locum Tenency.—Retired Practitioner having recently completed such is open to another in good class Practice, where work is light. He is not a cyclist.—Address, "Doctor," 13, Broadmead Road, Folkestone.

Locum Tenens, qualified and experienced, desires engagements. Good references if required.—Address, No. 3233, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Experienced Locum Tenens, retired from practice, disengaged end of June. Also had charge of sanatoria. Country or seaside preferred. Good references and testimonials. Accompanied by wife if possible.—Apply, "Locum," 834, Oldham Road, Newton Heath, Manchester.

Harrogate.—An experienced PRACTITIONER engaged in a good-class Practice in South of England, will be pleased to accept work as Locum Tenens in Harrogate for a few weeks in July or August on hospitality terms.—Address, Dr. B., c/o PERCIVAL TURNER, 4, Adam Street, Adelphi, W.C.

Fully-qualified medical woman required as LOCUM TENENS in South-Coast town. Terms, two guineas a week board and lodging.—"Locum," 23, Pevensey Road, St. Leonards-on-Sea.

Holiday Locum, wanted for 14 or possibly 28 days from July 20th, in pleasant resort near Bournemouth. Garden, tennis, sea, etc. Hospitality and return fare given. Work limited to a few hours a day. Further particulars on application.—Address, No. 3213, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Holiday Locum.—Hospitality offered doctor and wife, with fares from London, for three or four weeks in August. Country Practice in Surrey. Light work. Croquet lawn, motor, golf.—Address No. 3214, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Holiday Locum.—Light work taken for 3 weeks from August 13th in return for Hospitality and attendance for self and family. Country or seaside. Abstainer. Experienced. — Address, No. 3226, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Hospitality offered to medical man and wife for August in return for Locum Work. Country practice near Taunton. Work light. No parish. Return fare. Cyclist preferred.—Address, No. 3272, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Experienced Locum Tenens, doubly qualified, is free to undertake engagements during July and August. Terms four guineas a week and return travelling expenses.—Address, "Locum," 3, Salisbury Avenue, Harpenden.

Medical man now holding an appointment, but who has been accustomed to good class Practice, would TAKE CHARGE for a fortnight or three weeks of a Practice at the sea or other attractive locality in return for hospitality to wife and self, and one return first-class railway fare.—Address, No. 3234, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

South of England.—A retired Doctor will TAKE CHARGE of an easy Practice in return for hospitality for self and another gentleman.—Address, No. 2715, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Lady Dispenser, certificated, Book-keeping, Surgical Dressings if required, experience in Hospital and private work, is now booking engagements as Locum Tenens, or will take permanent post.—Address, No. 3228, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted. — (1) Country or country town PRACTICE of £600 a year or more. (2) Good middle-class Practice within fifty miles of London. Capital available £2,000. (3) South-Coast Practice. Good house. (4) Partnership in town or country. Capital up to £1,500.—Apply, PEACOCK & HADLEY, 19, Craven Street, Strand, W.C.

Wanted Practice near London on line to Victoria. £500 per annum upwards. Nice house and garden necessary.—Full particulars and terms to No. 3215, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted a Practice of £300 to £500 income with good scope in country town or residential neighbourhood, within one hour by rail of London.—Address, No. 3219, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted a Practice of £300 to £500 income with good scope in pleasant country town or small seaside resort.—Address, No. 3218, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted a good country PRACTICE over £500 per annum. Fair size house and garden desired. Can negotiate at once. —Address, No. 3276, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted, a genuine Practice of £600 or over, a comfortable house and some garden essential, full value given, must bear investigation.—Address, in confidence, No. 3271, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted, by a well-qualified, experienced married man, NUCLEUS PRACTICE or PARTNERSHIP, with view to Succession, in a good country district, preferably Hants, Gloucestershire, Oxford, Warwick, or Berks. A good house and grounds desired, which could be purchased if suitable. No agents.—All replies in first instance in strict confidence to No. 3207, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Wanted a Partner in a private non-dispensing general Practice—in a town near South Coast. He must be a F.R.C.S.Eng., and not over 30 years of age.—Address, No. 3120, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Partnership for £100 in charming suburb. Over 1,000 new houses and many more in course of erection. Vendor having good clientele till recently worked from a distance desires to co-operate on equal terms with energetic man who will reside at other end of district. No opposition. Expenses covered first year. —Address, "E. O. F." 8, Birchin Lane, E.C.

For immediate disposal, a good middle-class PRACTICE, situated on the outskirts of a large city, doing over £400 per annum and presenting great scope for increase. Pleasantly situated house, with garden and stabling attached. Premium £700, to include drugs and surgery fittings. — Address, No. 3237, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

For immediate disposal, a superior old-established cash PRACTICE in East London. Income nearly £400 a year. Small house in main thoroughfare. Ample scope. Exceptional opportunity for a young man with small capital. Premium only £250.—Address, No. 3257, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

For sale, well-established PRACTICE of nearly £300 per annum in pleasant and increasing neighbourhood close to large provincial city. Good semi-detached house, with garden and every convenience. Rent only £28. Patients nearly all of the middle and respectable artisan class, who nearly always pay the fees at the time, but plenty of well-to-do people around. One year's premium expected, based on the cash receipts for the years 1906, 1907, and 1908, but from suitable man, if part were paid down, the balance might be paid later. Preference given to some one able to come for personal interview.—Address, No. 3250, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

For immediate disposal, NUCLEUS in West of London. Established more than two years. Receipts for second year £150. Within half an hour of Oxford Circus. Growing neighbourhood. Excellent house in important main road. Surgery attached. Vendor has just got Government appointment. Very small premium to prompt purchaser.—Address, No. 2621, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

For immediate disposal, a death vacancy in a Lancashire town, PRACTICE established many years, average receipts £700 to £800 a year, expenses low. Patients middle and working class.—For further particulars apply R. SUMNER & Co., Ltd., 50A, Lord Street, Liverpool.

For immediate disposal, a NUCLEUS in pretty village S.W. of England, doing over £3 a week. Good scope. Rates and rent, £28. Very moderate premium to immediate purchaser.—Address, No. 3240, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

For sale, an old-established PRACTICE of about £200 a year, in a favourite South Coast Health Resort. Appointments over £40 per annum. Price to an immediate purchaser £150. No agents.—Address, No. 3232, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

For immediate disposal, a cash and general PRACTICE in populous district. £600 per annum. Furniture optional. —Address, No. 3239, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

For sale. — Cash Surgery (recently established) in a busy North London thoroughfare. Receipts about £2 a week. Excellent opening for bachelor. Small premium. Full particulars at interview.—Address, No. 3227, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

For disposal.—East Midlands. Sound unopposed country PRACTICE in prosperous locality, £1,000 to £1,200 per annum. Moderate expenses. Excellent house, gardens, &c. Premium £2,000. Apply, Mr. REASIDE, Guy's Hospital, S.E.

For immediate disposal mixed class PRACTICE, rapid rising district, over £500 per annum. Good fees. Splendid opportunity for an energetic man.—Address, No. 3277, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

South of England. — Very attractive country town. Old-established, good-class PRACTICE, many years in present incumbent's hands. Cash receipts average over £2,000, including a desirable appointment worth £250 per annum. Very good society. Sport of all kinds. Premium for goodwill £3,200. Scope for increase. Excellent and commodious house, with large secluded garden, which must be purchased.—Apply, Mr. G. B. STOCKER, Managing Director, Scholastic, Clerical, and Medical Association, Ltd., 22, Craven Street, Strand, W.C.

Midlands.—Very old- established PRACTICE in small town, 150 miles from London. Population 3,000. One opponent. Pretty scenery and all kinds of sport. Receipts owing to illness only about £500, formerly £700. Large and convenient house and charming garden. Rent £50. Fees 2s. 6d. to 10s. 6d. Midwifery declined. Premium £750. £250 down and instalments. — Address, No. 3279, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Practically unopposed and old- established PRACTICE in N. Lincs., worth £2500 a year. Appointments £110. Easily worked. Hounds in district once a week. Suitable man would make £700 a year, as exceptional opportunities offer. Premium £750.—Address No. 3222, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Death vacancy.—Midlands.— Average cash receipts over £500. Good house on lease, £45. Moderate premium will be accepted from an immediate purchaser. — Apply, LEE & MARTIN, 3, Frederick Road, Five Ways, Birmingham.

Practice wanted within 8 miles of Birmingham. Bankers references given. No agents.—In first instance, send name and address for an interview to No. 3229, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Practice. West London. Receipts about £200; increasing; scope. Appointments £50, easily transferable. Good house and position. Low rent. — Address, No. 3278, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Married man wanted for COLLIERY PRACTICE in South Wales. Must be well qualified, well up in surgery and midwifery, and used to colliery Practice. Permanent position. Terms to be arranged. Abstainer preferred.—Address, with copies of testimonials, No. 3117, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Manchester.—For disposal, working-class PRACTICE. Receipts varying from £700 to £900, clubs £70. Visiting fees 2s. 6d.; Surgery fees 1s. 6d.; Midwifery fee 21s. Rent, rates, &c., £42 In present hands over 13 years. A small premium would be accepted from immediate purchaser. Ill-health sole cause of leaving.—Address, No. 3220, BRIT. MED. JOUR. Office, 429, Strand, W.C.

Lancashire.—For immediate disposal, PRACTICE in pleasant district within 20 miles of Manchester. Income over £1,500 per annum, easily worked without assistant, practically no night work. Patients all classes. No clubs or appointments. Good house. Rent £50.—Address, No. 3235, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

£200. — Small Practice realizing £250. Nice country part within twenty miles of London. Excellent house and garden. Suitable either for a man retiring from a heavy practice or energetic man, as plenty scope for increase. Good fees.—Address, No. 3230, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

South Coast.—£800 per annum, including over £200 from appointments. Fees 2s. 6d. to 10s. 6d. mostly prescribing. Midwifery £1 11s. 6d. upwards. Rent £60. Suit well qualified man. Ample scope. Price including drugs and fixtures £1,200. No one need apply unless able to provide cash in full. Full particulars.—Address, No. 3216, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Yorks.—Old-established country PRACTICE for sale. Good house, with stabling, large garden, and land; rent £60, or smaller one could be got. Receipts over £550 (last year £640), and increasing. Population more than 6,000. One opponent. Transferable appointments £55. Three months' introduction. Price £550.—MANCHESTER CLERICAL, MEDICAL, & SCHOLASTIC ASSOCIATION, Ltd., 8, King Street.

Medical Practice (old established) City, North of England. Cash receipts about £1,300, including transferable appointments of £240. Partnership introduction. Vendor retiring. Will accept £1,200.—R. FLEMING, S.S.C., 21, Hill Street, Edinburgh.

West of England City.— Well-established NUCLEUS. Cash receipts second year £223. Worked from Surgery. Rent £23. Mostly cash. Rapidly growing. Good reasons for disposal. Full books shown.—Address, No. 1802, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

West End Practitioner (good clientele) wishing more recreation would like to hear from a colleague with similar desire with a view to friendly help on reciprocal terms.—Write "X. J." c/o WILLINGS, 73, Knightsbridge.

Required by medical man (Lond. Conj.) a sound PRACTICE of £4,700 per annum. Country or country town preferred.—Address, No. 3259, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

To Colonial Practitioners.— Any well-established transferable PRACTICE (Colonial) at reasonable price can probably be disposed of by forwarding full details to the Managing Director, SCHOLASTIC, CLERICAL, AND MEDICAL ASSOCIATION, Limited, 22, Craven Street, London, W.C., who has inquiries for such investments. A query form to fill in appears in the advertisement pages of the BRITISH MEDICAL JOURNAL for January 2nd, 1909.

To Doctors.—Superior, new, modern HOUSE, Brondesbury. Prominently situated; good-class residential neighbourhood; wide side-way. Nine rooms, bath, &c.; electric light; tiled hall; train and 'bus to all parts. Rent £58.—Apply, W. E. SANDERS, Architect, 118, Camden Road, N.W.

To Purchasers of Practices.— Before concluding arrangements the books should be examined and the numerous necessary inquiries as to bona fides made by a Medical Accountant specially versed in such matters. With over 30 years' experience and special facilities for making such enquiries, Mr. PERCIVAL TURNER will be happy to act for purchasers at short notice. Terms and full particulars on application—4, Adam Street, Strand, London, W.C. Telephone, Central 3399.

Nucleus for sale, in North London. Very suitable for a bachelor. Rent only £35 per annum.—Address, No. 3221, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Exceptional opportunity.— Nottingham, "The Eagles," Gregory Boulevard. Excellent dwelling accommodation, surgery, stabling, carriage house, &c. Rent £45.—Apply, BAKER, HALFORD & SONS, Nottingham.

Welbeck House,
Wigmore Street, W.

Two handsome Maisonettes TO BE LET.

One containing three reception-rooms and three bedrooms, kitchen, bathroom, etc.; the other with one bedroom less.

Rentals £350 and £300 per annum respectively, including rates and taxes.

These Maisonettes have exceptionally lofty, well lighted rooms, and will be artistically decorated to suit tenants' requirements. They are fitted with every modern improvement, including electric light, continuous hot-water supply, radiators, telephone, separate tradesmen's entrance, etc.

THE SUITES ARE SPECIALLY ADAPTED FOR AND SUITED TO THE MEDICAL PROFESSION.

For further particulars and orders to view, apply Estate Offices on the premises. (Telephone, "Paddington 4.")

MESSRS. ELLIOTT, SON & BOYTON,
6, Vere Street, W., or principal agents.

Harley Street. — The direct LEASE of over 30 years of one of these particularly well arranged Houses for Sale by order of Executors. Remodelled and greatly improved a few years since. Four rooms on ground floor, two drawing-rooms on first floor, and ten bedrooms and bathroom. Excellent basement accommodation and capital stabling at the rear.—ELLIOTT, SON & BOYTON, 6, Vere Street, W.

Harley Street (Cavendish Square end).—Large first-floor CONSULTING ROOM, suitable for Dental Surgeon, and use of waiting room, to let. Workroom available if required.—Address, No. 1492, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Harley Street (overlooking Cavendish Square).—To be let, Doctor's CONSULTING ROOMS, beautifully fitted, with Patients' waiting-room and attendance.—Apply to Messrs. FRANK NEWMAN & BLUNT, 34, Savile Row, London, W.

To Post-graduates who value real home comforts, good cooking and attendance. Bathroom, quiet room for reading. Convenient for tubes and hospitals. Highest references from post-graduates and others.—Apply, Mrs. TAYLOR, 23, Stonor Road, Kensington, W., off Avonmore Road. Two minutes W. Kensington and Addison Road Stations.

Education for Doctors' sons. Exceptional offer.—Headmaster of a high-class Preparatory School on borders of Kent and Surrey—most successful in gaining Public School Scholarships, is prepared to receive at *merely nominal fees* a few clever boys (ages 11 to 13)—sons of gentlemen—to work with scholarship class. Good premises and extensive grounds 500 feet above sea-level.—Apply to Messrs. NEEDES, Clock House, Arundel Street, Strand, W.C., who guarantee this to be a *bonâ fide* offer.

Coachmen's and Groom's LIVERIES.—Large Stock of Top Coats, drab and coloured, Summer Coats, Waistcoats, drab and white Doeskin Cloth Breeches, Buckskin Breeches, Top Boots, Hats and Gloves, in first-class condition, Lots of New Liveries never worn, best clothes, best West-end of London make. Mackintoshes, Carriage Aprons. Cheap on approval. Send for price list.—ARMSTRONG, 33, Connaught Street, Marble Arch, Hyde Park, W. Telephone 1999 Paddington.

CONSULTING ROOMS TO BE LET.

WIMPOLE STREET. Fine Ground Floor Room with Bed and Dressing Room. Self contained.
WIMPOLE STREET. First Floor Suite of 3 large Rooms and Bath. Bedroom if required.

AGENTS:
ELLIOTT, SON & BOYTON,
6, Vere Street, Cavendish Square, W.

Sight testing taught privately in London to qualified Practitioners only by easy and reliable method. Tuition fees moderate and inclusive.—Address, No. 3134, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

On sale cheap modern X-Ray APPARATUS, Cox's 12 inch coil, with variable primary, mechanical interruptor, Mackenzie Davidson motor interruptor, and double anode electrolytic interruptor, together with two new tubes and new screen.—Apply, THOMAS DRYDEN, Engineer, Preston.

Wanted by Physician use of ROOM on ground floor near Portland Place, London, for three hours weekly to see patients.—Address, No. 3202, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

To let.–Part use of Consulting ROOM. Excellent opportunity. Good service, fine waiting room, £25 or £40 (inclusive of fire, light and attendance) according to number of days used.—Address, No. 3208, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Consulting Room and use of Waiting-room to let in Cavendish Square district. Rent £90 inclusive.—Address, No. 3210, BRITISH MEDICAL JOURNAL Office, 429, Strand, W.C.

Consulting-Room to let, very high class. Best part of Harley Street.—Apply, "Q," c/o GLAISHER, 57, Wigmore Street, W.

Croquet.—£3 3s. superior ASSOCIATION SET, by noted maker, 4 beautiful mallets, shaped handles, heavy boxwood, 9 in. by 3 in. heads; 4 regulation selected boxwood balls, heavy enamelled hoops, drill, guage, spring clips, posts, rules, and every requisite, all standard pattern to conform to revised laws. Handsome set, finest possible finish, unused, complete in case, 36s. 6d. Approval.—Box 369, GILYARDS' Library, Bradford.

Tennis Outfit.—Complete set for 39s. 6d., or divide as under. Handsome pair 31s. 6d., thick polished ash, standards, ground plates and net winder, 17s. 6d.; 15s. waterproof bound top net, 8s. 6d.; two first-class, 12s. 6d. Racquets, beautifully strung, 6s. 6d. each; dozen excellent club balls, 6s. 6d.; all perfect and new, lot for 39s. 6d., worth £4 4s. Approval.—Box 41, GILYARD'S Library, Bradford.

For sale, Tallerman's Hot-Air APPARATUS, in perfect order, cost £59, will sell cheaply to a prompt purchaser.—Rev. Canon GILLESPIE, Finnoe Rectory, Borris-o-Kane, Co. Tipperary.

Wanted a set of Histological and PATHOLOGICAL SLIDES in good condition.—Apply, stating price, to C. E. MURPHY, 24, Waterloo Crescent, Dover.

Berks County Asylum, Wallingford.

SECOND ASSISTANT MEDICAL OFFICER (male) wanted. Candidates must be unmarried and not more than 30 years of age. Salary £150, rising £10 yearly to £170, with board, furnished apartments, attendance, &c. A sum of £6 is allowed in lieu of liquors.

Applications, stating age, qualifications, copies of three recent testimonials and enclosing photo, to be sent to Medical Superintendent.

Walsall and District Hospital. (Special Departments:—Ophthalmic, Ear, Nose & Throat, and X-Ray.)

Applications are invited for the appointment of JUNIOR HOUSE SURGEON. Salary £80 per annum, with board, residence, etc.

Candidates, who must possess registered qualifications, should forward applications, stating age, together with copies of three recent testimonials, to the undersigned.

HAROLD WIGG, Co-Secretary.

June 25th, 1909.

The Royal Portsmouth HOSPITAL, Portsmouth.

Required ASSISTANT HOUSE SURGEON (male) (six months appointment), to commence duties 1st August. Salary £50 per annum, with board, &c. It is usual for the holder of the Junior appointment to be appointed in due course to the Senior Resident appointment in the Hospital. Selected candidates will be allowed a sum not exceeding two guineas for railway fare.

Applications, and copies of testimonials, not exceeding six in number, to reach the undersigned not later than Saturday, July 10th.

B. WAGSTAFF, Secretary.

City and County of the City OF CHESTER.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Council of the City and County of the City of Chester invite applications for the above appointment from registered Medical Practitioners holding the Diploma of Public Health.

The salary will be £500 per annum, and the appointment will be made at the Meeting of the Council, to be held on the 28th July next. The District for which such appointment is to be made is the City and County of the City of Chester.

The person appointed will be required to devote the whole of his time to the duties of his office under the Council, which will include, in addition to the duties imposed by Statute and Order, the Medical Superintendence of the Isolation and Small-pox Hospitals and Medical Officership to the Local Education Authority. He will also be required to make all Bacteriological examinations and analyses of water.

The appointment will be for six years from the 19th September next, and will be subject to the approval of the Local Government Board.

Applications, which must be made on forms provided, and accompanied by copies of not more than three recent testimonials, must be sent to me, endorsed "Medical Officer of Health," not later than Saturday, the 10th July next.

Canvassing either directly or indirectly will be a disqualification.

Forms of application, and particulars of the appointment and duties, may be obtained from

J. H. DICKSON,
Town Clerk.

Town Hall, Chester.
23rd June, 1909.

Hanley, Stoke, Fenton and LONGTON JOINT HOSPITAL BOARD.

RESIDENT (LADY) ASSISTANT MEDICAL OFFICER.

Resident (lady) Assistant Medical Officer, duly qualified and registered in medicine and surgery, wanted at the Infectious Diseases Hospital, Bucknall, Stoke-on-Trent (160 beds), to act under the Medical Superintendent; will be required to dispense. Diseases treated: Scarlatina, Diphtheria and Typhoid, Typhus and Cerebro-Spinal Meningitis. Vacancy at once. Salary £100 per annum, with apartments, board, washing and attendance. Must have a good knowledge of practical bacteriology.

Applications, stating qualifications, age and experience, accompanied by copies of recent testimonials and photograph (which will be returned) to be forwarded to me at once.

C. H. PHILLIPS,
Medical Officer to the Board.

Beech Hurst, Hanley, Staffs.

Hull Royal Infirmary.

The Appointing Committee are prepared to elect an HONORARY OPHTHALMIC SURGEON to the Institution.

Applicants must be a Fellow Member or Licentiate of one of the Royal Colleges of Surgeons in England, Edinburgh, or Ireland, or a Graduate in Surgery of one of the Universities of the United Kingdom or Ireland.

He will be required to give evidence of six months' duty at some Ophthalmic Hospital or Dispensary, or an Ophthalmic Department of a General Hospital or Dispensary, and he will be restricted to Ophthalmic practice in the Infirmary.

Honorary Surgeons are appointed for a period not exceeding twenty years, or until attaining sixty years of age. Applicants are prohibited from personally canvassing, but may send copies of their applications and testimonials to the members of the Appointing Committee. Applications, addressed "The Chairman, Committee of Management," must be received at the Board Room of the Institution not later than Ten o'clock a.m., on Wednesday, the 7th day of July, 1909.

By order,
BENJAMIN BROOKS, Secretary.

Board Room, 15th June, 1909.

Birkenhead and Wirral CHILDREN'S HOSPITAL, Woodchurch Road, Birkenhead.

There is a vacancy for a Male HOUSE SURGEON, duly qualified and registered, at the above Hospital. The appointment to date from July 19th, and to be for twelve months. Honorarium £100, with board, residence, and laundry. Applications, with testimonials (copies), to be sent on or before the 3rd July, to F. W. ARCHER, Lissant Mount, Fairview Road, Oxton.

Hastings, St. Leonards, and EAST SUSSEX HOSPITAL.

Wanted, ASSISTANT HOUSE SURGEON (qualified).

Honorarium £20 for six months, with residence, board, and washing.

Applications in writing, with copies of testimonials, to be sent to the Secretary at once.

Bethlem Hospital.

Wanted RESIDENT HOUSE PHYSICIAN (unmarried) recently qualified in Medicine and Surgery.

The term of residence is for six months from July 1st next, apartments, complete board, and washing being provided, and an honorarium of £25 per quarter will be paid. He will be under the direction of the Resident Physician, and applicants are required to present themselves to him previous to the date of election.

Applications, with testimonials, are to be forwarded to the Treasurer, Bridewell Hospital, New Bridge Street, E.C., before June 28th, endorsed "House Physician."

Candidates must attend at Bethlem Hospital on Wednesday, June 30th, at 11.30 a.m., when the Subcommitte will make the appointment.

JOHN BREWER, Clerk, &c.

Bridewell Hospital, New Bridge Street, E.C.
June, 1909.

Royal Hampshire County HOSPITAL, Winchester.

Applications are invited for the post of HOUSE PHYSICIAN, vacant July 1st, 1909.

Candidates must possess a Diploma in Medicine from the Royal College of Physicians in England or a Royal College or University in England, Scotland, or Ireland; also a degree in Surgery from one of the said Colleges or Universities or a licence from the Society of Apothecaries.

Salary £65, rising to £75, with board, residence, &c. Candidates must be unmarried.

Applications, with testimonials (not exceeding three in number, and including at least one as to personal character), should be forwarded to

W. CAREY, Capt. R.N.,
Hon. Secretary.

June 15th, 1909.

West Bromwich District HOSPITAL.

Wanted, a RESIDENT ASSISTANT HOUSE SURGEON. He must be doubly-qualified and unmarried. Salary £75 per annum, with board, residence, and washing.

Applications, stating age, and if possessing a knowledge of ophthalmic surgery, &c., to be sent to the Honorary Secretary, T. Foley Bache, Esq., Churchill House, West Bromwich. Each candidate must transmit his certificate of registration.

The candidate appointed will be required to take up his duties immediately.

By order of the Board,
FRANK I. HANCOCK, Secretary.

April, 1909.

South Devon and East CORNWALL HOSPITAL, Plymouth (155 beds).

The Committee invite applications for the appointment of a qualified HOUSE SURGEON for a period of one year, renewable for a further similar period.

To commence duties on 15th July, 1909. Salary £100 per annum, with board, residence, and washing. Special consideration will be given to candidates who have held an appointment in a large Hospital.

Canvassing for votes either directly or indirectly is prohibited.

Candidates, stating age, should send copies of testimonials (not exceeding six in number) on or before 6th July, 1909, to

P. J. LANGDON, Secretary.

Plymouth, 18th June, 1909

East London Hospital for CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.

HOUSE PHYSICIAN (Male). This appointment will be vacant on the 1st August, 1909. Candidates must be fully qualified and registered. Board, residence, laundry, &c., are provided. Salary at the rate of £75 per annum, paid monthly.

Applications, with copies of testimonials, should be forwarded to the undersigned on or before Saturday, the 17th July, 1909.

W. M. WILCOX, Secretary.

Bournemouth.—Royal BOSCOMBE AND WEST HANTS HOSPITAL. (50 Beds.)

HOUSE SURGEON wanted. Duties to commence 25th July inst. Salary £80 per annum, with board, lodging, and washing. Appointment for six months, renewable at Committee's discretion for further six months. Applications and testimonials to be sent to the HON. SEC. not later than July 7th.

Leeds Public Dispensary.

Vacancy for JUNIOR RESIDENT MEDICAL OFFICER.

Appointment for one year. Salary £100, with board and lodging, and an increase of £10 on re-appointment. Applications, with three testimonials, to be sent in on or before Monday, July 5th, addressed to the SECRETARY of the Faculty, Public Dispensary, North Street, Leeds.

APPOINTMENTS VACANT.

WARNING NOTICE.

Medical practitioners are requested NOT to apply for appointments in connection with Clubs or other forms of Contract Practice in any of the towns or districts named in the following table, or for any of the Poor-Law or other appointments named, without first communicating with the Honorary Secretary of the Division or Branch, whose name is given in the second column of the table, or with the Medical Secretary of the British Medical Association, 429, Strand, W.C.

CONTRACT PRACTICE APPOINTMENTS.

ENGLAND.

Town or District.	Hon. Sec. of the Branch or Division.
BARNSLEY AND DISTRICT.	Dr. HAROLD F. HORNE (Hon. Sec., Barnsley Division), Ivyhurst, Barnsley, Yorks.
CHESTERFIELD.	Dr. HUGH BARBER (Hon. Sec., Derby Division), 45, Friar Gate, Derby.
CLUTTON UNION: Including MIDSOMER NORTON, RADSTOCK, PEASDOWN, PAULTON, and TIMSBURY. (*Medical Aid Societies.*)	Dr. NEWMAN NEILD, 9, Richmond Hill, Clifton, Bristol. W. M. BEAUMONT, Esq., 4, Gay Street, Bath (Hon. Secs. Bath and Bristol Branch).
COVENTRY. (*As regards Dispensary Appointments.*)	Dr. V. PENDRED (Hon. Sec., Coventry Division), 2, Lansdowne Place, Coventry.
DURHAM COUNTY, also SUNDERLAND and DARLINGTON. (*As regards appointments in connection with collieries, Miners' Unions, Friendly Societies, and Medical Aid Associations.*)	Dr. TODD (Hon. Sec., North of England Branch), Beech House, Sunderland.
EAST KIRKBY, KIRKBY-IN-ASHFIELD and DISTRICTS. (*Friendly Societies appointments*).	Dr. THOMSON HENDERSON (Hon. Sec., Nottingham Division), 15, The Ropewalk, Nottingham.
LOWESTOFT.	Dr. W. TYSON (Hon. Sec., North Suffolk Division), The Beeches, Lowestoft.
PRESTON, LANCS.	W. SYKES, Esq. (Hon. Sec., Preston Division), 20, Fox Street, Fisher-Gate, Preston, Lancs.
SHEFFIELD. (*Clubs: Medical Aid Association.*)	Dr. A. W. FORREST (Hon. Sec., Sheffield Division), Dun Edin, Attercliffe Common, Sheffield.
SOUTHAMPTON, BITTERNE, and neighbourhood.	G. H. COWEN, Esq., F.R.C.S. (Hon. Sec., Southampton Division) 16, Cumberland Place, Southampton.

ENGLAND—*continued.*

Town or District.	Hon. Sec. of the Branch or Division.
WORCESTER.	Dr. MAYBN READ (Hon. Sec., Worcester Division), 42, Foregate St., Worcester.
WOOLSTON.	G. H. COWEN, Esq., F.R.C.S. (Hon. Sec., Southampton Division), 16, Cumberland Place, Southampton.

WALES.

Town or District.	Hon. Sec. of the Branch or Division.
ABERAMAN, GLAMORGAN.	C. J. WEICHERT, Esq., (Hon. Sec., North Glamorgan Division), Pen-y-graig, Pontypridd.
ABERTYSSWG.	R. J. COULTER, Esq., F.R.C.S. (Hon. Sec., Monmouthshire Division), 11, Clytha Park Road, Newport, Mon.
AMMANFORD, CARMARTHENSHIRE.	Dr. J. E. P. DAVIES (Hon. Sec. South West Wales Division), Castle Hill, Llanelly.
CWMBACH, ABERDARE.	C. J. WEICHERT, Esq. (Hon. Sec., North Glamorgan and Brecknock Division), Pen-y-graig, Pontypridd.
EBBW VALE, MONMOUTH.	R. J. COULTER, Esq., F.R.C.S. (Hon. Sec., Monmouthshire Division), 11, Clytha Park Road, Newport, Mon.
LLANBRADACH COLLIERIES.	Dr. CYRIL LEWIS (Hon. Sec., Cardiff Division), 27, Windsor Place, Cardiff.
WREXHAM AND DISTRICT. (*As regards appointments in connection with Friendly Societies.*)	E. D. EVANS, Esq. (Hon. Sec., Denbigh and Flint Division), Bodeirian, Wrexham.

SCOTLAND.

Town or District.	Hon. Sec. of the Branch or Division.
KELTY, FIFE. (*Colliery appointment*).	R. BALFOUR GRAHAM, Esq., F.R.C.S. (Hon. Sec., Fife Branch), Sea View House, Leven, Fife.

COLONIAL.

Town or District.	Hon. Sec. of the Branch or Division.
AUCKLAND CITY, NEW ZEALAND.	Dr. H. M. G. GOLDSTEIN (Hon. Sec., Auckland Division), New Zealand Branch, Auckland.
EAST LONDON AND DISTRICT, CAPE COLONY. (*Friendly Societies.*)	Dr. D. M. MACGREGOR (Hon Sec., Border South Africa Branch), East London, Cape Colony.
ORANGE RIVER COLONY, SOUTH AFRICA.	Dr. E. W. D. SWIFT (Hon. Sec., O.R.C. Medical Society), Box 214, Bloemfontein.
NATAL.	Dr. P. MURISON (Hon. Sec., Natal Branch), M.O.H., Durban.
WELLINGTON PROVINCE, NEW ZEALAND. (*Friendly Society appointments.*)	Dr. C. M. BEGG (Hon. Sec., Wellington Division), New Zealand Branch, 24, Hill Street, Wellington.
PRETORIA, SOUTH AFRICA.	Dr. W. B. WOODHOUSE (Hon. Sec., Pretoria Medical Society), Box 708, Pretoria, South Africa.
NEW SOUTH WALES. (*Friendly Societies appointments.*)	Dr. R. H. TODD (Hon. Sec., Sydney and New South Wales Branch), Northfield Chambers, Phillip Street, Sydney.
WAIPAWA, HAWKES BAY, NEW ZEALAND. (*Friendly Societies appointments.*)	Dr. E. A. W. HENLEY (Hon. Sec., Hawkes Bay Division), New Zealand Branch, Post Office Box 64, Napier, New Zealand.

PUBLIC HEALTH APPOINTMENTS.

ENGLAND.

HAMPSTEAD, PARISH OF ST. JOHN, HAMPSTEAD and KILBURN DISTRICTS. (*As regards Public Vaccination appointments.*)	C. W. CUNNINGTON, Esq. (Hon. Sec., Hampstead Division), 88, West End Lane, N.W.

HOSPITAL APPOINTMENTS.

ENGLAND.

HAMPSTEAD.	C. W. CUNNINGTON, Esq. (Hon. Sec., Hampstead Division), 88, West End Lane, N.W.

Address:
429, Strand, W.C.,
June 23rd, 1909

By order of the Council of the British Medical Association,
J. SMITH WHITAKER, Medical Secretary.

The Hospital for Sick CHILDREN, Great Ormond St., London, W.C.

A HOUSE PHYSICIAN is required on the 21st July, 1909.

Candidates are invited to send in their applications, addressed to the Secretary before 12 o'clock on Tuesday, the 6th July, with not more than three testimonials *given specially for the purpose*, and also evidence of their having held a responsible Hospital appointment.

The appointment is made for six months. Salary £30, washing allowance £2 10s., and board and residence in the Hospital.

Candidates must be unmarried, and possess a legal qualification to practice. They will be required to attend before the Joint Committees at their meeting on Wednesday, the 7th July, 1909, at 5 p.m. precisely.

Forms of application to be obtained from the Secretary.

By order of the Committee of Management,
STEWART JOHNSON, Secretary.

June, 1909.

The Hospital for Sick CHILDREN, Great Ormond St., London, W.C.

Wanted, a LOCUM TENENS to undertake post of Bacteriologist and Pathologist from 19th July to 14th August. £3 3s. a week.

STEWART JOHNSON, Secretary.

West London Hospital and POST-GRADUATE COLLEGE, Hammersmith Road, W.

There are vacancies for CLINICAL ASSISTANTS to the Medical and Surgical Out-Patients and in the Special Departments for Diseases of the Eye, Throat, Nose and Ear, Skin, and X-rays, &c., and also for three CASUALTY OFFICERS. Clinical Assistants must be qualified. Each appointment is for three months, from July 1st, 1909. The fee is £2 2s., which includes membership of the Post-Graduate College on the days upon which they attend.—Applications must be sent in by June 28th to the undersigned, from whom all particulars can be obtained.

L. A. BIDWELL, Dean.

West Riding Asylum, Wadsley, near Sheffield.

Wanted, FIFTH ASSISTANT MEDICAL OFFICER (Male), who will be required to commence duties on 2nd August next. Salary £140, rising £10 a year to £160, with board, &c. Applications, with three testimonials (copies only), to be sent to the Medical Superintendent, on or before 8th July.

Bristol Eye Hospital.

The post of HOUSE SURGEON is vacant.

Salary £80 with board and residence.

Applications, stating age and qualifications, should be made to

L. CRANFIELD ABBOTT,
Hon. Secretary.

Clapham Maternity Hospital.

Wanted for early July, qualified medical woman as JUNIOR HOUSE SURGEON (Battersea District). Cyclist and abstainer. Board and residence. Excellent work.—Apply, Dr. ANNIE MCCALL, 165, Clapham Road, London, S.W.

The Mount Vernon Hospital FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.

JUNIOR RESIDENT MEDICAL OFFICER required at the Hospital at Hampstead. Applicants must be fully qualified and registered. Honorarium, with board and residence, £50 per annum. Applications, with copies of testimonials, including at least two as to personal character, should be sent to the undersigned on or before Saturday, June 26th.

WILLIAM J. MORTON, Secretary.

Offices: 7, Fitzroy Square, London, W.

The Mount Vernon Hospital FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.

An ASSISTANT RESIDENT MEDICAL OFFICER will shortly be required at the country branch Hospital at Northwood, Middlesex. Applicants must be fully qualified and registered. Honorarium £50 per annum with board and residence. Applications, with copies of testimonials, should be sent to the undersigned on or before Saturday, July 3rd.

WILLIAM J. MORTON, Secretary.

Offices: 7, Fitzroy Square, London, W.

Cheltenham General Hospital.

The post of SURGEON-IN-CHARGE of the Branch Dispensary is vacant. Candidates must be unmarried, have a registered qualification in Medicine and Surgery, and produce evidence that they are qualified to administer Anæsthetics. Salary £80 per annum, an allowance of £10 per annum in lieu of cab hire, with board and lodging at the General Hospital. The Duties of the Surgeon-in-Charge are to see Out-patients daily (Sundays excepted) at the Branch Dispensary, and to attend such patients at their own homes as may require a visit. Applications, with copies of testimonials, to be sent to the undersigned at the Hospital on or before Saturday, July 3rd, next.

Personal Canvass of the Governors is expressly forbidden.

By order,
W. H. HEAD, Secretary.

Royal Edinburgh Hospital for SICK CHILDREN.

Wanted for this Hospital, FOUR RESIDENT MEDICAL OFFICERS, to enter on 15th October next. Information as to duties, &c., can be obtained from the ordinary physicians and surgeon at the Hospital. Applications, with 30 copies of testimonials, to be lodged on or before 17th July with Messrs. HENRY & SCOTT, W.S., 20, St. Andrew Square, Edinburgh. No applications will be received after that date.

Tiverton, Devonshire. INFIRMARY AND DISPENSARY.

Wanted at end of July next, HOUSE SURGEON and DISPENSER. Salary £80 and all found. 23 beds (including 4 pay beds).

Applications and testimonials to be sent to the undersigned on or before 19th July. Any further particulars can be obtained of,

ARTHUR FISHER, Hon. Secretary.

23rd June, 1909.

London Lock Hospital, Harrow Road, W., and 91, Dean Street, Soho.

The office of REGISTRAR will be vacant, and candidates, who must be F.R.C.S.Eng., are invited to send in their applications for the above appointment, with copies of testimonials (not more than three), to the SECRETARY, Harrow Road, Paddington, W., not later than July 12th. Personal canvassing by candidates of the Board, Governors, or Medical Staff is not permitted.

National Hospital for the RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen Square, Bloomsbury.

SURGEON for Diseases of the Ear and Throat. The Board of Management invite applications for the above appointment from gentlemen who are Fellows of the Royal College of Surgeons of England.

Applications, with copies of testimonials, may be sent on or before 12th July, 1908, to the undersigned, from whom particulars of the duties can be obtained.

GODFREY H. HAMILTON, Secretary.

Weston-super-Mare HOSPITAL.

A HOUSE SURGEON is required. Candidates must be unmarried, and qualified in Medicine and Surgery, and duly registered under the Medical Act. Salary £100 per annum, with board and residence in the Hospital.

Application, stating age, qualifications, &c., with testimonials (not exceeding six), to be sent to the Hon. Secretary not later than the 6th July. The duties will begin on 30th July next.

8th June, 1909.

Parish of Paddington

MATRON wanted at Paddington Infirmary. Salary £100 per annum. with board, lodging, and washing. Candidates, not exceeding 45 years of age, must have received thorough hospital training.

The appointment will be made on probation for twelve months, and will be subject to the (1) approval of the Local Government Board; (2) production of a medical certificate of health, to be given by a medical practitioner approved by the Guardians; and (3) provisions of the Superannuation Acts.

Personal canvassing of the Guardians is objected to, and selected candidates will receive notice when and where their attendance will be required.

Applications must be made on forms, which will be sent by the undersigned upon receipt of a stamped addressed foolscap envelope or wrapper, and must be sent in by 10 a.m. on Monday, 12th July, 1909.

HENRY F. AVELING,
Clerk to the Guardians.

Guardians' Offices,
313-319, Harrow Road, W.
23rd June, 1909.

MILDMAY NURSING INSTITUTION, 9 & 10, NEWINGTON GREEN, N.

Fully trained NURSES for Medical, Surgical, Maternity, and Fever Cases to be had immediately on application to the Superintendent.

Telegraphic Address: "NURSING," London.

Telephone No. 141 Dalston.

MALE NURSES' (TEMPERANCE) CO-OPERATION, LIMITED

Incorporated under the Companies Acts, 1862 to 1900.

Only Addresses { **LONDON: 10, THAYER STREET, MANCHESTER SQUARE, W.**
MANCHESTER: 235, Brunswick Street (facing Owens College). **EDINBURGH: 7, Torphicen Street.**

Superior Trained MALE NURSES for Medical, Surgical, Mental, Dipsomania, Fever and Travelling Cases supplied at a moment's notice, Day or Night. Skilled MASSEURS supplied. Terms £1 16s. 6d. to £2 2s. and upwards. Nurses to receive their own fees. *All Nurses are Insured against Accidents.*

TELEPHONES { **(LONDON)—538 PADDINGTON.**
(MANCHESTER)—4699 CENTRAL.
(EDINBURGH)—2715 CENTRAL.

TELEGRAMS { **"ASSUAGED, LONDON."**
"ASSUAGED, MANCHESTER"
"ASSUAGED EDINBURGH."

F. ROUSE WALSHE, *Secretary.*

TEMPERANCE MALE NURSES CO-OPERATION

LONDON: 43 NEW CAVENDISH STREET, W.
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GLASGOW: 28 WINDSOR TERRACE.

TELEPHONES:
London: 1472 Paddington.
Manchester: 5213 Central.
Glasgow { **949 Charing X (Nat.)**
477 Central (P.O.)

TELEGRAMS:
Tactear, London.
Tactear, Manchester.
Surgical, Glasgow.

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(2) PARTNERSHIP, with view to Succession in a year, to an old-established middle and working-class Practice in a large country town in the Midlands. Cash receipts average £1,700 to £1,800 per annum, including appointments of over £250. Premium £2,000 to £2,250 according to length of introduction. Health considerations sole reason for selling.

(3) WITHIN ONE HOUR BY RAIL OF LONDON.—Very attractive residential country neighbourhood. Old-established, good-class PRACTICE. Cash receipts average over £900. Excellent detached house with stabling and large garden. Rent £130 or would be sold. Premium for good-will £1,868. Twelve months introduction, if required.

(4) SOUTH OF ENGLAND.—Large Seaport Town. Increasing PRACTICE. Receipts for 1908 over £870, including appointments of about £350. No horse. Detached house, with garden. Rent £37 10s. Educational facilities. Premium £1,300, to include drugs and surgery fixtures.

(5) RESIDENTIAL NORTHERN SUBURB.—Middle-class PRACTICE. Cash receipts average over £530, including appointments worth £130. Rent of house £50. Premium only £500 to a prompt purchaser.

(6) NEAR THE EAST COAST.—Small country town. Very old-established PRACTICE. Cash receipts average over £541, including club appointments worth £100 per annum. Good house, with stabling and garden. Rent £50. Sport of all kinds. Premium £700.

(7) WEST OF ENGLAND.—PARTNERSHIP in an unopposed country Practice of nearly £1,300 per annum, derived largely from appointments. Beautiful country. No horse. Good house with stabling and pretty garden. Rent £36. High and bracing. Premium for third share £880, to include share of drugs, &c.

(8) NORTH OF ENGLAND.—University and hospital town. Great opportunity for anyone wishing to put by money. Increasing PRACTICE of £1,290 (cash receipts for 1908), chiefly working class. Appointments of £230 included. Rent of house £35. Excellent social and educational advantages. Three or six months introduction. Premium £1,250 of which £450 could be paid by annual instalments.

(9) NORTHERN SUMMER RESORT, with golf links and other sport. Good class PRACTICE of about £900 (1908 about £960). In same hands many years. Rent of house moderate. Six to twelve months' Partnership introduction. Premium £1,800.

(10) NORTH WALES.—Favourite seaside resort. Good class PRACTICE. Cash receipts average over £780. Very good house. Rent £85, or would be sold. Social and educational advantages. Premium 2 years' purchase.

(11) HOME COUNTIES.—Old-established unopposed PRACTICE in a most attractive country district within 25 miles of London. Receipts for 1908 over £500, including appointments worth nearly £100. Old-fashioned, commodious house (adapted to the reception of Resident Patients), with stabling and large fruit and flower gardens. Rent £119, reduced to about £90 by subletting land. Sport of all kinds. Premium £1,100.

(12) NEAR INLAND WATERING PLACE (WEST).—A PRACTICE of £574 (bookings last 12 months) in a Country Town. Rent of house, with large garden, £32. Sport of all kinds; lovely country. Premium only £650, to include drugs.

(13) SOUTH-WEST OF ENGLAND.—Seaside Village. Very old-established unopposed PRACTICE. Cash receipts average over £640, including appointments worth over £100. Commodious house, with modern conveniences, standing in half an acre of ground. Rent £70. Premium £1,050.

(14) WEST OF ENGLAND.—Small Watering Place. Old-established PRACTICE of over £400 per annum, including appointments of over £160. Excellent house, which can be rented (furnished) for £25 per annum. Premium £600. Scope for young energetic man.

(15) FAVOURITE SUMMER RESORT (SOUTH-WESTERN COUNTY).—Good class non-dispensing PRACTICE of about £900 per annum, with a good appointment of £100 per annum. Good house. Rent £45. Six or twelve months' Partnership and premium accordingly. Scope.

(16) SOUTH-WESTERN COUNTY.—Near a first-rate town, unopposed PRACTICE of about £500 per annum (£140 from appointments), with scope to increase to £700. Excellent freehold house, grounds, &c., which must be purchased, price £1,250. Premium for Practice, £750.

(17) WEST OF LONDON.—Old-established middle and working-class PRACTICE. Cash receipts average over £720 per annum (of which about two-thirds is from ready money payments), including Clubs worth about £150. No midwifery under £1 1s. Good house, rent £54. Premium £300.

(18) LONDON, W.C.—Good middle and working class PRACTICE (non-residential). Chiefly amongst Italian and French people. Cash receipts average about £680 per annum. Rent £40. Premium £400 (of which £200 could be paid by instalments), to include furniture, drugs, and fittings.

FOR SALE—Continued.

(19) SOUTH-WESTERN COUNTY.—Old-established unopposed PRACTICE of over £500 per annum, including appointments worth about £160. Premium £790. Extremely well built modern house standing in its own grounds (two acres) with full sized tennis lawn, flower and kitchen garden, which must be purchased. Price £1,335. Would suit a purchaser with some private means, fond of sport and society. Scope for increase. Pretty country. Station in place. Main line.

(20) UNOPPOSED PRACTICE in a favourite South-Western county. Receipts average nearly £600 per annum. Premium £1,000. Rent of house, with stabling and large garden, under £30.

(21) PARTNERSHIP (ONE-THIRD SHARE) in a Practice of £1,600 to £1,700 per annum. Mostly ready-money. Up to one-half in two or three years. Premium 1½ years' purchase. Part by instalments. Would suit bachelor or married man (without family) wishful to save money.

(22) PRACTICE of nearly £800 per annum in a thickly-populated part of the West Midlands. Appointments and clubs over £300. Rent £32. Premium £850. Good sporting county.

(23) HOME COUNTIES.—Very old-established Country PRACTICE on main line, 1½ hours by rail from London. Cash receipts over £300, including appointments worth over £150. Good house with stabling and garden. Rent £70. Sport of all kinds. Premium £1,250.

(24) A THIRD PARTNER is required in a PRACTICE in a large Cathedral and Hospital town within 3 hours of London. Cash receipts for 1908 over £2,000. Very good modern detached house with good garden which must be purchased. Price £2,000. Premium for one third share 2 years' purchase. Social and educational advantages.

(25) PARTNERSHIP in an increasing middle and upper working class Practice in an industrial town in the South Midlands, within an hour by rail of London. Cash receipts for the year ending February, 1909, over £1,500 (average for three years £1,370). Price for two-fifth share two years' purchase, with the option of further purchase in three years' time.

(26) LONDON.—Residential suburb South of the River. Good middle classs PRACTICE. Cash receipts for 1908 over £650, including appointment worth £120. Well situated house, with small garden. Rent £60. Premium £650.

(27) LARGE SEAPORT TOWN—NORTH.—Old-established PRACTICE. In present hands 25 years. Cash receipts average about £1,200 per annum, including appointments worth about £100 per annum. Well-situated house, with stabling and small garden. Rent £70. Premium 1½ years' purchase.

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(32) LONDON, N.W.—Residential suburb. Good middle-class PRACTICE of over £500 per annum. No midwifery under £2 2s. Well situated house. Rent £80. Introduction as desired. Premium £800. The Practice is capable of great increase.

(33) PARTNERSHIP in an old-established unopposed Practice in a small country town in the Home Counties. Cash receipts average over £1,600, including appointments worth nearly £300. Premium for two-fifths share £1,300, with option of purchasing up to one-half later on. Very good golf links.

(34) SUBURB OF BIRMINGHAM.—Old-established PRACTICE. Receipts average over £100. No carriage. Large and pleasantly situated house. Flower and kitchen garden. Rent £12. Premium £750, to include furniture, drugs and fittings.

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(40) WANTED, a PRACTICE or PARTNERSHIP of about £650 per annum in a good sporting district in the South or South-West of England. Purchaser is L.R.C.P. & S., aged 45, experienced, and can invest £1,500.

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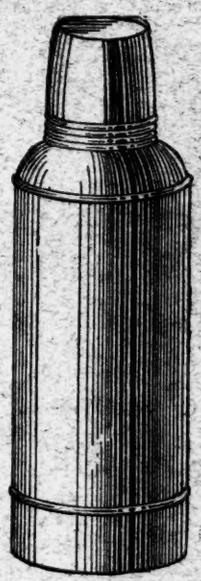

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